AMERICAN BEE JOURNAL



OCTOBER, 1928

THE DOUBLE-WALLED HIVE FOR
WINTER —J. E. CRANE

A FANCY PACKAGE FOR ORANGE HONEY

THE CARE AND STORAGE OF

HONEY

-M. H. MENDLESON

APPARATUS FOR USE WITH FORMA-LIN TREATMENT —JAY SMITH

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10 cases	4 1/4 x 1	% F	at			\$3.95
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Send us a sample of your honey and quote your best price. We will buy for cash or trade for bee supplies.

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Ship your old comb and beeswax to us to be worked into foundation or for cash.

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16-oz. Honey	Capacity,	2	doz.	per	carton	 \$1.20	car.
						 .90	6.6

8-oz.	Honey	Capacity,	2	doz.	per	carton	 \$1.05	car.
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ANY NUMBER

50c each

Guaranteed to be as good as money can buy.

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"Diamond I" Fluted Glass Jars.
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BEEKEEPING

By E. F. PHILLIPS

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We are making a special price on a few of the 1922 editions of this book which we still have on hand, to make room for the new edition just coming out.

Our price on these books while they last is only

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AMERICAN BEE JOURNAL

Hamilton, Illinois

P. S.—The new edition sells at \$4.00



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SHIPMENT BY RETURN MAIL All queens of select quality. We kill the culls.

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Select Untested Queens Select Tested Queens \$1.00 each, \$90.00 a hundred

Queens wings clipped free of charge on request.

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"Have had your strain for fifteen years and they are it. I never fail to get a crop of honey."

Our Strain Is the Best to Be Had-and Why?

Our Strain Is the Best to Be Had—and Why?

Because for thirty-five years we have been selecting from the best and otherwise improving our Three-Banded Strain of Italian bees. The writer, M. C. Berry, has devoted his life from twelve years of age to the bees. Therefore, today we have a strain of Italians unexcelled for gentleness, disease resistance and honey production. Having several branches for honey production located in Nebraska, Iowa, Wisconsin, and Manitoba, Canada, gives us an excellent opportunity to test our strain personally. All queens that show marked wintering and honey production qualities, etc., we have returned to us for breeding purposes. No disease. Safe arrival guaranteed.

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All goods purchased may be returned if unsatisfactory and money cheerfully refunded. No questions asked.

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While we ship all over the country, we can give special service to those located in the East—New York, Pennsylvania, New England, and Atlantic Seaboard states.

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W. T. Falconer Mfg. Co., Falconer, N. Y. Gentlemen:

Without obligation on my part, please quote ---- Hives ____ Sections Supers ____ Br. Fdn. ____Frames ____ Super Fdn. Bodies ____

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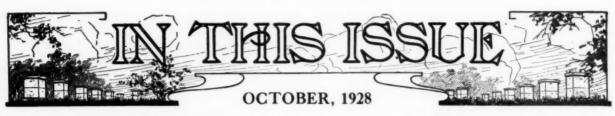
If it is, you should keep your customers supplied and hold their trade for the future.

We can furnish you -White or Light Amber Honey in 60 lb.; 10 lb.; and 5 lb. cans.

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HAMILTON, ILLINOIS



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Our Cover Picture

October is the month of asters and goldenrods. Three species of the latter flowers are shown in this month's cover from photos by John H. Lovell. Goldenrods are among our most widely distributed native flowers, some species being found from the Atlantic to the Pacific and from Maine to California.

In some localities large yields of honey are secured from this source. The honey is usually of good quality, but varies greatly in color in different regions.

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2½-lb. cans, per reshipping case of 24\$1.05
2½-lb. cans per carton of 100 3.90
5-lb. pails, per reshipping case of 12 1.05
5-lb. pails, per carton of 50 3.20
5-lb. pails, per carton of 100 6.30
10-lb. pails, per reshipping case of 680
10-lb. pails, per carton of 50 4.60
60-lb. square cans, in bulk, each35
60-lb. square cans, per case of 1 can60
60-lb. square cans, per case of 2 cans 1.05
24-oz. round glass jars, per case of 24 1.60
16-oz. round glass jars, per case of 24 1.25
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All above prices are F. O. B. Boyd, Wisconsin

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A. I. Root Co., of Chicago 224 W. Huron Street, CHICAGO, ILL.

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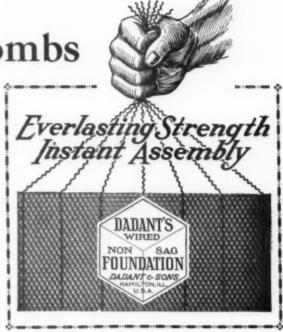
Straight Frame--Filling Combs

With the Least Labor!

In Dadant's Wired Foundation the work of embedding and wiring is all done for you. You have little to do but use it in the quick, simple way shown below.

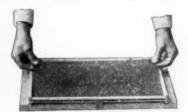
Seven, stiff, crimped wires of spring steel hold the foundation rigidly at center and go right down through the Lewis slotted bottom bars. It took costly experiments to find a suitable wire. They are not soft, but are of tempered steel. Melt them out of the wax, and they are absolutely straight, sidewise or endwise. Can you beat this support?

Wired Foundation gives solid combs, built out fully, combs that cannot sag. Just keep your hives level from side to side and the combs will delight you.



It Is So Easy To Use

The easiest way in the world to get good combs and strong colonies is to fill your frames with Wired Foundation. Slip the sheets into Lewis slotted



bottom bars, put five nails in each top wedge — and you're done.

No embedding, no fussing; just free, easy work. The foundation is held in the frame snug and tight, saves hours of tiresome work and gives you the greatest possible results in good combs.

"I own and operate better than 1,000 colonies, and Wired Foundation saves me lots of time."

J. D. Beals,
Oto, Iowa.



"Saves the farmer-beekeeper a great deal of time, labor, and patience. Wiring and embedding the old way are so slow when busy with farm work."

> A. A. Augenstein, Dakota, Ill.

When you plan your foundation buying consider what this means to you.

Makes the Small Hive Big, and the Big Hive Bigger

Combs are fastened to the sides and along the bottom bars. Cells can't stretch. There



is seldom much lost space above the bottom bars or in the corners, and so little space for drone-cells that the poor fellows have a hard time being born.

Queens can lay from top to bottom and from side to side, resulting in powerful colonies. Every inch of comb is suited for either brood or honey.

Dadant & Sons, Hamilton, Illinois

Makers of Dadant's Famous Foundation

Wired - Plain - Surplus

The Only Reenforced Foundation Made Entirely of Pure Beeswax







You are within the Fourth Postal Zone of Lewis anywhere East of the Rocky Mountains

HOW TOYS HELP YOU



Toys are now helping to cut the cost of supplying you with Lewis Beeware. Because of the outlet toys give to use cuttings from boards, you receive only the finest materials in Beeware —far better materials than any other manufacturer can afford to give who has no similar outlet for cuttings.

Those who have visited the Beeware plant have been as amazed as we at the great amount of waste in cutting up lumber for making into beekeepers supplies, even with the most careful buying and manufacturing. This problem has caused us great concern, because it practically controls our profits. With no adequate outlet for thousands upon thousands of cuttings, having to sell them locally as kindling at a tremendous loss below cost of material, chances of profit without increases in selling prices of Beeware were doubtful.

Arkitoy Play Lumber, the trade name under which thousands of these sets of toys have already been sold for the 1928 Christmas trade, isn't just a side line. It has taken with the trade beyond our fondest expectations, has necessitated use of lumber beyond our cuttings, and a separate department to handle it without interference with or from our main lines.

Until we have had more experience with Arkitoy we can only hope for the manufacturing savings it seems to be making to be reflected in other ways for the benefit of the honey producer than just the choice of better materials for Beeware. It has already enabled us to plan for passing on a just share of these savings to Beeware purchasers, so we may make announcements of these plans from time to time.

In the meantime we invite you to compare more critically than ever the grade of materials and workmanship in Lewis Beeware with other beekeepers supplies. Besides these paramount points keep in mind: 1—adequate illustrated directions; 2—full count of all parts; 3—packing which insures clean and safe delivery; 4—the widest dealer distribution; 5—shipment of orders within 18 hours, etc. THESE YOU GET IN LEWIS BEEWARE. Remember a guarantee is no better than the house that makes it. BEWARE WHERE YOU BUY YOUR BEEWARE.

HONESTLY MADE

HONESTLY SOLD-

-HONESTLY PRICED

STANDARD OF THE BEEKEEPING WORLD

G.B.LEWIS COMPANY

Established 1874

HOME OFFICE AND WORKS WATERTOWN, WISCONSIN

BRANCHES - ALBANY . NEW YORK

LYNCHBURG, VIRGINIA

TEXARKANA, ARKANSAS

SIOUX CITY, IOWA

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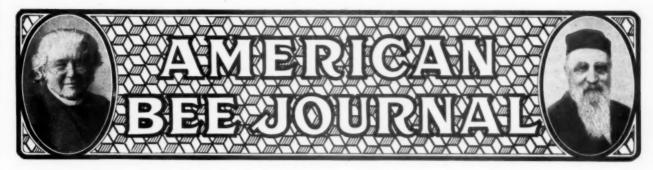
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Hamilton, Illinois, October, 1928

Monthly, \$1.00 a Year

The Double-Walled Hive for Winter

By J. E. Crane

IN discussing the advantages and disadvantages of double-walled hives I shall assume that the double-walled hives are to be wintered out of doors, while single-walled hives are to be wintered in cellars or some special repository.

When I began beekeeping, some sixty years ago, I did not have a very good cellar for wintering bees and so began experimenting with double-walled hives well packed with sawdust, chaff, or shavings. I soon found that I could winter bees safely in our cold climate in this way, and have used such hives mostly for more than fifty years.

fifty years.

I have also used single-walled hives, more or less, and wintered them in cellars. A good colony of bees with a good supply of good honey or sugar syrup, in a well-packed, double-walled hive, in a yard protected from the wind, will, as a rule, winter well—as safely, I believe, as cattle or sheep.

But there are other factors that enter into wintering bees than the walls of the hive that may make all the difference between success and failure. I have seen parts of yards of double-walled hives completely wiped out that were exposed to heavy winds, while the rest of the yard would suffer little.

Advantages of Double-Walled Hives

Not only do double-walled hives protect a colony from the cold of winter, but they are helpful during spring in brood rearing. A colony of the same size can rear more brood during the cold, changeable weather of spring in a double-walled hive than in a single-walled hive.

Colonies with double walls suffer less from sudden changes of temperature in spring. It makes one feel badly to open a single-wall hive in April after a frosty night to see how much brood has been chilled and lost. Hives with double walls and well packed are much cooler during hot summer days, especially if they

A timely article from Mr. Crane. He has a long experience with the double-walled hive for winter, and his advice should be worth much to those interested in this equipment. Many beekeepers are thinking seriously of the use of a permanently packed hive.

sit in the sun, for that which keeps bees warm in winter keeps them cool in summer.

Bees in double-wall hives will, I believe, winter better on poor honey or insect honey, out in the open, than in cellars, as they often have a chance to fly during the cold months.

I have had some interesting experience along this line. I had three yards in double-wall hives where the bees filled them nearly solid with honeydew the last of August and early September. Not only was a large part of the winter stores honeydew, but the bees were greatly reduced by working on this poor substitute for honey; and yet I succeeded in getting about 75 per cent of the colonies through the winter, although many of them were quite weak.

Another advantage of double-wall hives is that we are saved the labor of carrying our hives into the cellar in the fall and carrying them out again in spring, which is quite a task, especially if you have yards of bees at some distance from home.

They are quickly packed. With a warm cushion over the brood nest and the entrance contracted, they are ready for winter.

Colonies of bees that are wintered out of doors do not drift as those that have been wintered in a cellar, when first taken out, which may be a matter of considerable importance. There is an individuality about a colony that sets in the same place, summer and winter, year after year.

We come to know them as we know our neighbors. Each hive has a history that is interesting and we remember it much better than when hives are set out in spring just as it happens.

Disadvantages of Double-Walled Hives

But there are certain disadvantages in double-wall hives. They cost, as a rule, very much, more often twice as much as single-wall hives.

It requires much more honey to winter a colony even in a good, wellpacked double-wall hive out of doors than in a single-wall hive when wintered in a fairly good cellar, and we build double-wall hives to winter outdoors. Some fifty years ago, or more, I shook the bees from the combs of three strong colonies of bees in double-wall hives and weighed the combs, about the first of November. Again, on a warm day about April 1, I shook them from the combs and weighed the combs and found the average loss, as I remember, to be seventeen pounds, the combs from one hive going three-fourths of a pound above and another as much below the average. Later I had a yard of about eighty single-wall hives wintered in my cellar. I weighed them as they went in and again as they were carried out. I found the loss to vary greatly-from five to over twenty pounds, while the average loss was not far from ten pounds. So I found it required an average of seven pounds more to winter in wellpacked hives out of doors than in single-wall hives in a good cellar. These figures would vary with varying conditions doubtless, but it has seemed to me a fair test.

While it is true that small or weak colonies can be wintered safely out of doors in well and carefully packed hives (I have wintered many such), I am quite sure they can be much better wintered in a good cellar.

It is a good deal of labor to move bees into and out of a cellar, especially when the bees are in yards some distance from home.

Double-wall hives are heavier to handle and but poorly adapted to many manipulations often found desirable during the swarming season.

Again, the upkeep of a large, double-wall hive is greater than that of a smaller single-wall hive.

If I were beginning keeping bees again, with all the experience of the past sixty years, I hardly know which style of hive I should prefer. It would doubtless depend somewhat on the conditions with which I found myself. If I had a dry, warm cellar, I think I should use the single-wall hive; if not, I might prefer the warmer, but more expensive and clumsy, double-wall hive.

There are other things than the thickness of the wall of a hive that spells success in wintering bees. A good colony in a warm hive, if left to severe winds during winter, may perish, while the same colony in a single-wall hive setting out of the wind may winter safely. A small colony in a large brood chamber would be very likely to die although in a double-wall hive, even if set out of the wind. The size of the colony and size of brood chamber have much to do with wintering bees out of doors.

Getting rid of the moisture that bees throw off during long periods of severely cold weather is of more importance than many beekeepers have thought. imply just as great a difference in the development of the bees that laid the eggs. This in turn might make a difference in the regard worker bees have for these laying workers of different development, also their treatment in requeening of a cell or a queenbee.

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Not all laying workers show this variation in the size of eggs. In the colony which built the comb shown in the picture, I examined the eggs carefully to see if there was any difference in the size of laying worker eggs and the eggs of a mated queen. I could not see any difference, nor any difference in the size of the eggs in that comb.

If, as I believe, a laying worker is only a slightly overfed worker bee, I think it is reasonable to draw these inferences:

First. That there may be one or scores of laying workers.

Second. There may be great variation in their development from one just able to lay a very small egg to a near queen.

Third. That these last might be near enough real queens to destroy their inferiors and make the colony difficult to requeen

difficult to requeen.

Fourth. That there is a difference in their hatching all the way from one that will not hatch up to one as good or nearly as good as the drone eggs from a good queen. If you ever broke a very small hen's egg, you know it has no yolk and will not hatch.

There is a possibility of hand fertilizing the largest of these laying worker eggs, as Donhof claims to have done with the drone eggs of a mated queen (also Gilbert Barratt in England.—Ed.) I am trying to hand fertilize laying worker eggs, but so far have failed entirely.

How Common Are Laying Workers

By E. M. Cole

I may be of interest to know that laying workers, at least in a good-sized nucleus, build worker comb. A three-frame nucleus which I had, built a strip of comb attached to the cover, beautiful worker comb. The picture shows it.

On one side, among many cells containing an egg and a larva, I found one cell containing two goodsized larvæ, each one large enough to fill the bottom of the cell. They were side by side on their backs, head and tail up and as contented as any, as near as I could tell.

The fact that laying workers will build worker comb suggests a number of points. They are said to be hard to requeen and it may be that with eggs and young larvæ coming on they are not conscious of queenlessness, not at first distinguishing between drones and worker eggs and young larvæ, but being able to do so when the larvæ has reached a more advanced stage.

You will recall Huber's experiment in which bees started queen-cells from drone larvæ and he decided that in this their instinct erred. He changed his mind later when he found that bees invariably finished and capped them as drone-cells. This would bear out the idea that they are not conscious of queenlessness.

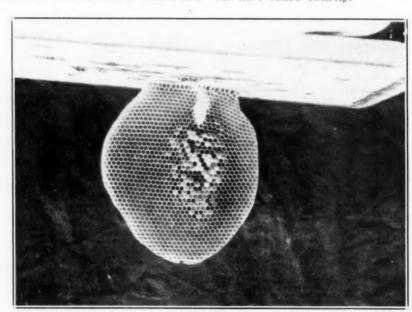
There is a possibility that we owe a good many of our drones to laying workers, for if laying workers are present in a queenright colony it may be that when their eggs are properly placed in drone-cells they are allowed to mature.

The idea that a colony which develops laying workers is not worth requeening is not necessarily true. I once hived a swarm not more than twenty feet from where they issued and put them back where they came from. For the few bees left crawling around in the grass, I placed a

hive with an empty frame or two and no combs. On looking at it a few days later this handful of bees had built a strip of comb two inches long and an inch or two wide and filled it with the eggs of laying workers. These must have been young bees, or they would have returned home.

An interesting possibility is that a queenless colony may develop laying workers because of a decreasing amount of brood space and a consequent oversupply of larval food, resulting in some of the worker brood being overfed, thereby developing laying workers.

I would like to have the eggs of laying workers examined with a microscope. They seem to me to vary greatly in size, comparatively speaking, some being three or four times the bulk of others. This would



Worker-comb built by bees with laying workers

A Brand New One From Kellogg's

EVEN though the original colors are not shown in this reproduction of Kellogg's new poster advertising cornflakes and honey, one gets an immensely favorable impression of it. To see it in the original colors, however, is to be still more favorably impressed; golden honey, flowers in color, crisp yellow flakes, and, back of all, the subtle word "flavor," in a lighter blue, with Kellogg's neat box in the usual colors at the bottom.

Altogether a very fine piece of advertising, not only for Kellogg's, but for all beekeepers. The size of the original is 14x10 inches, a fair size, suitable for use, mounted on heavy cardboard, in store windows or on the counters. If generally used, it will mean much for both industries.

We have two other posters issued by the Kellogg Company, both featuring honey. One is a long panel, 42 inches up and down by 13 inches wide, with the title, "Health Cooking," in red. It shows a box of raisins, a jar of extracted honey and a plate of pancakes, a box of Kellogg's All-Bran, and bran muffins on a plate. Quite suggestive.

Another, all in colors, is 20 inches from side to side by 9 inches up and down. A blue background with a light blue border, showing a jar of honey, a dish of Kellogg's All-Bran topped with prunes and a package of All-Bran at the right. The title is "Bran for Health." Honey in both cases is featured prominently. In addition to this, as most of us already know, the Kellogg Company has issued two little folders which are just about the right size to go into an envelope with the daily mail; one entitled "Cooking with Honey," giving recipes and facts about honey,"

prepared by Miss Barber, and the other entitled "Do You Like Honey?", prepared along similar lines. Both are of four pages in two colors. Mr. Wholihan, of the advertising department, tells me that they will be very glad to furnish any of these honey posters to beekeepers who distribute their product to the stores.

"These posters are quite suitable for placing in windows and we have found them to be very effective. Most of your readers are familiar with our willingness to supply honey folders containing recipes, for distribution to customers who are interested in honey."

Space Between Frames

In "The Honeybee," paragraph 316, you recommend a wider space between the frames than is furnished on the self-spacing kind. I found this out through accident in 1922, but had never thought of applying the ruler to the spacing of the frames, which we always increase the thickness of a piece of honey section. I now find with the help of a pair of dividers that the frames in one of our best hives are spaced 1% inches from center to center.

T. Gorsuch, Maryland. (The differences in spacing of brood combs were inaugurated by Dzierzon and Berlepsch, one of them using the 1% spacing and the other the 1½. After trying both, we adopted the 1½, over fifty years ago. But the 1% is too great and you will find it only in accidental cases, when the combs were already built and were fortuitously thus spaced afterwards. For comb honey, they may be spaced as far as two inches.— Editor.)

Macy's Honey Special

Macy & Co., one of New York's leading grocers, advertises in magazine pages offering a special on honey. They show the picture of a jar in the shape of an orange, holding less than one pound. They say it has the flavor of the flowers and fruit of California, and mention the price—94 cents. The honey is put up by a firm in Los Angeles.—From California State Beekeepers' Association "Beetimes."

Robert N. Curtis Dies from Bee Stings

Robert N. Curtis, 56, owner of a large apiary in the vicinity of Canon City, Colorado, while working on his hives, was stung many times when the bees swarmed. One-half hour after the attack Curtis became ill and died. Physicians advance the idea that one or more of the stings pierced a nerve, resulting in heart contraction.

J. B. Dillon.



The Kellogg poster described above. Original in colors. Beekeepers are offered these free from the Kellogg Company

BEE JOURNAL Established by Samuel Wagner in 1861

The oldest Bee Journal in the English language. Published monthly at Hamilton, Illinois. Copyright 1928 by C. P. Dadant

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A Resolution that Should be Widely Copied

The following resolution was passed at the Federation of New York State Beekeepers' Association, at Trumansburg, New York, August 30, 1928:

"Whereas, The value of honey as a food and the importance of its production as a primary agricultural crop has been recognized since the earliest days of history: and

"Whereas, The problems of the beekeeper have been studied by entomologists and specialists, although little attention has been given to stimulating the larger consumption of bee products; and

"Whereas, The U. S. Department of Agriculture has been of inestimable help in increasing the interest of the consumer in dairy products, in meat products, and in fruits and vegetables, be it

"Resolved, by the Federation of New York State Beekeepers' Associations, That our departments at Washington be requested to undertake investigations for the purpose of determining ways and means for increasing the consumption of honey through a scientific study of the special nutritive values of honey; of its application in medicine; of its suitability for use with other foods, and in general of its importance as a natural sweetening agent."

Passed by unanimous vote.

A similar resolution was also passed by the Western New York Honey Producers' Association at their summer meeting at Lockport, August 22, a copy of which was sent to us by their secretary, Howard M. Meyers.

Other associations should follow these examples. With the formation of the new Honey Institute at Indianapolis, and the recent organization of the large corporation, Honey and Preserves, Inc., a New Jersey firm, to handle honey in large amounts over a nation-wide market, in-terest in beekeepers' products has suddenly jumped from the horizon to the fore. So get busy, associations, and help out by following the example of the Empire State Federation.

Copies of the resolutions should be sent to the United States Department of Agriculture.

Preparing Bees for Winter

Preparing the colonies for winter, we take it as a matter of course that our beekeepers, all over the central states, will see to it that their bees have a sufficiency not only for winter, but to carry them through the early spring breeding months. But the quality of the honey is of as great importance as its amount. We were caught several times with poor honey and honeydew in the brood combs. Reading what the monthly statement from Ithaca, N. Y., has to say on this subject, we cannot do better than to quote it verbatim, for we know by experience that it is correct. We have but little goldenrod here, but we often have honeydew and we know that it is very

injurious when bees are confined on it during cold weather.

"Too much cannot be said about stores, for possibly this factor causes the greatest loss to the beekeeping industry of any with which the beekeeper has to deal. We must consider both quality and quantity of stores. Frequently we have difficulty in this state with honeydew and from fall honey like that from goldenrod. These substances contain dextrin, which the bees cannot digest and which will cause dysentery when bees are confined for long periods, as is common in New York State. If much of this material is obtained during the fall, each colony should be fed ten pounds of sugar syrup. The bees will place this about their brood nest, consume it first, and thus by the time they eat their way to the poorer stores, their period of confinement is nearly over."

The beekeepers of Canada have less trouble, usually, than we have in wintering, because most of them feed some sugar syrup late in the season, on which the bees pass the worst months of winter. Keep this matter in mind when preparing the bees for the cold weather.

Bees in the Cellar

Mr. J. E. Crane, who writes an article on double-wall hives in the present number, is a man of great experience - perhaps the most experienced of all our contributors, because he has been keeping bees so long. He is a close observer.

The reader will take note of what he says about cellar wintering. We had exactly the same experience with bees drifting from one hive to another when first taken out of the cellar. Later we accidentally found that some of the old bees remember the location of the fall previous and try to return to it, and that is usually what causes the colonies to drift. So we took the habit of placing the colonies back in the exact spot which they occupied the fall previous. This is not difficult to do. We usually leave the cap of the hive on the old stand, with its number marked on the underwide of its Pacidos when we ber marked on the underside of it. Besides, when we take bees into the cellar we begin by taking in the rows which are nearest the door, leaving the farthest rows In that way, when they are taken out again it is the colonies which are the farthest from the cellar that come out first and their bees are not in the way while taking out the others, as they would be if the nearest colonies were removed first.

We also notice that by replacing them in the exact spot which they occupied before winter, we preserve the colonies' identity, and it is a very good thing for an old beekeeper, for he often can tell the history of a colony of bees to many years back and knows whether they are good producers without having to refer to a record book, which most beekeepers keep. Of course, it is necessary to have the hives marked with a number.

Fifty Years of Meetings

Wisconsin Beekeeping informs us that the fiftieth convention of the Wisconsin beekeepers will be held this year at Madison. Fifty years! Half a century!

But we must remember that Wisconsin is a state that had some of the pioneers of beekeeping, fifty years ago and earlier; Adam Grimm and Edwin France, for instance. Few states can show many such men, for there were not many of them in the entire country.

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Attendance at Meetings

Our beekeepers often complain that too few of the honey producers attend the meetings held for their bene-This is true. But what would they say if they found their associations as neglected as is reported of the Association of Beekeepers of Chile by the "Revista Chilene de Apicultura"? According to the report published in their July number, the Chilene association was organized in 1925, and in 1926 had 136 members. But in May. 1928, the meeting was attended by only five beekeepers. The editor blames the beekeepers for their apathy, but does not seem to be very much discouraged. However, he is right in urging the members to attend their meetings. Chile is one of the best honey producing countries in the world, and some sixty years ago we already saw Chile honey mentioned in the quotations on the European markets.

But, for the Chileans and for our own beekeepers, neglect, apathy, will not do. The only way to succeed is to attend the meetings and learn something. There never was a meeting of bee men where we did not learn something useful that we did not know before. We should imitate the Swiss beekeepers, who always have a good attendance even at their local meetings. It is true that they manage to make their assemblies interesting and even amusing by adding some social features to their conventions. Let us resolve to attend our bee meetings and come to them prepared to do our share in the social functions as well as in the honey producing and selling lines.

Attendance at Fairs

The attendance and exhibitions of beekeepers at fairs is not what it should be. We complain of the difficulty of selling honey; yet we neglect one of the best means of placing it before the public. Beekeepers should attend fairs and exhibit honey. They should be present or have someone to represent them who can answer questions. There is no better way to get the public acquainted with the idea of granulated honey than to have some of it on display and be prepared to answer the questions of people who are ignorant of the value and properties of when it is granulated. It is quite a task to stand at an exhibit of bees and honey all day long for three or four days and reply to the thousands of questions that are asked. But there is no better way to advertise honey. Indeed the profit of an exhibit is not in the few dollars which are offered by the management of the fair. It is in getting the average person acquainted with your products and informing them as to the real value of honey, with its disposition to granulate and with the best method of reducing it to the liquid form when it does. There is no end to the information that may thus be imparted to the public.

Our Cover Page Picture in September

The apiary of the queen-rearing establishment of Signor Piana, given in our September number, is getting the praise of many of our beekeepers. Yet, there is to us a great fault in this: it is the too great regularity of the rows and the too great similarity in the little hives. We do not know whether Signor Piana has any losses of queens in their mating flight, but we suggest that, with a little less beauty in the view, more irregularity in the arrangement would secure better results. Some of the queens must surely make mistakes in returning to their homes after their mating flight, unless there are in the apiary some irregularities which are not visible in the picture.

Preserving the Wild Flowers

The activities of our co-editor, Mr. Pellett, on the matter of wild flower preservation have been noticed in a fine article in the Omaha Daily Journal-Stockman, which has been copied by the Hamilton Press. Mr. Pellett has gathered at his old home, near Atlantic, Iowa, about

one hundred different kinds of wild flowers of the central states, with the view of preventing their entire loss in the cultivation of the country. Few people have an adequate idea of how many flowers grow wild and how pretty some of them are in their natural wood and meadow environment.

Mr. Pellett is not a flower grower, but he appreciates the advisability of saving the flowers which nature has given us. He has a son, Melvin, who is a capable market gardener and has won a premium in a national garden contest.

These matters of cultivating flowers and plants are very closely connected with beekeeping.

The International Apis Club

The International Apis Club, which met August 12-16 at Bern and at Geneva, did to our editor the honor of writing him a letter, signed by thirty-five of the members present. The letter was written in French. Here is a translation of it:

"Mr. Dadant: The International Apis Club, meeting in Geneva and Bern, rendering an homage of recognition to the two masters, Huber, initiator, and Bertrand, propagandist of modern beekeeping, addresses to you the most cordial remembrance."

The list of signers is headed by Dr. Morganthaler, Baldensperger and A. Mayor. There are names from Italy, Switzerland, Canada, Germany, France and England. Our hearty thanks go to this assembly of bee masters for their kind remembrance.

The Province of Saskatchewan

Those northern provinces that did not have any bees some twenty years ago are now among the honey producers. The first annual report of the Provincial Apiarist of Saskatchewan, Mr. R. M. Pugh, for the year ending April, 1928, is on our desk. It shows that the 1927 honey crop totaled 500,974 pounds, from 5,962 colonies of bees, a part of which were imported packages. The report does not say from what blossoms the crop was gathered, but we judge that it must have been mainly from sweet clover. Their winter losses were heavy, but they will learn how to winter bees, for in those northern territories the cellar is usually best.

The report contains only eight pages, but is very interesting to anyone who has traveled through Saskatchewan.

Women's Rights

Most beekeepers are in favor of women's rights, and it is well that they should be. Is not the female side of the generation the most useful in bees? From October till the warm days of spring, the entire interests of the colonies are in the hands of the females, for both the queen and the workers belong to the female gender. And we cannot complain that they mismanage their work. There is nowhere better union, closer understanding, more harmony than in the beehive. All work for the common good and all work to the utmost of their ability. Where is there anything better in a world controlled by males? It is true communism without the selfishness, the bickerings, the divisions that are found among men in our so-called civilized countries. Look to the bees for good example!

Fall Feeding

Reader, your spring and early fall crops may be as bad as ours. In that case, you may have to do some feeding for winter. Better be prepared for it. And do not get discouraged, for the next may be a banner crop I remember a happening of that kind in 1902-1903. The former of those years was very poor and the younger generation became discouraged. But, having had many tuch bad seasons, followed by good ones, I urged perseverance, and in 1903 we were rewarded with one of our banner crops.

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A Fancy Package for Orange Honey

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A T a meeting in Kansas, during the past winter, E. L. Sechrist displayed an attractive fancy package which he had obtained in California. There was so much interest in it among the beekeepers present that further facts have since been gathered which show how well honey is adapted to this particular type of marketing, usually employed with so-called fancy goods.

"Orange Blossom Honey," the name associated not only with the product but with the way in which it is put up, is packed by The Southwest Honey Producers' Syndicate, located in Los Angeles, California. The handling of this package is not their only honey business. Western honey from every source and in the usual standard market containers probably forms the largest part of the business of the syndicate, the orange blossom package having been developed as a specialty product to capture the rapidly changing and worth while market among the tourist population.

It is put up to sell at a figure, of course, and does not represent the average market. We have no correct information about the price, but presume the package retails at about 50 cents in California and \$1.00 by mail; twelve ounces of delicate orange honey in a beautiful orange stone jar which, when empty, serves in many decorative ways.

The honey is from the orange groves of southern California, where, according to the company's attractive little envelope stuffer, "the nectar-hearted blossoms are the source of Nature's finest sweet, conceded by all experts to be the most exquisitely



flavored honey in the world. Give your guests a new 'taste thrill.'"

Maybe the sweet clover or white clover man will dispute this statement. Nevertheless, orange is one of our finest honeys.

They guarantee the honey in the little stone jars to be 100 per cent pure and true to name, a fact to which they attest (to all their customers) by a postal card emphasizing this particular.

In all, their sales literature is way above the average for beekeepers and can favorably be compared with that put out by those handling other food products in a national way. They have apparently spared no expense for the proper kind of advertising. If there is any virtue in the package and if correct use is made of the advertising, the



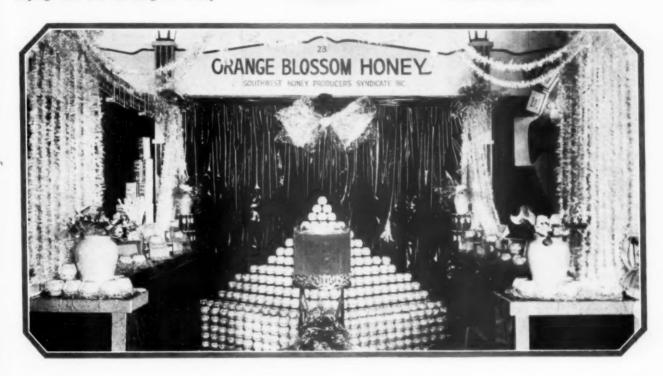
little orange package should show a great increase in sales over a period of years. Small beginning must be made with a specialty of this kind. They will probably be content for the present to see profits ahead and an even balance at hand. This is about all that can be immediately expected from a specialty, if average experience is to rule.

The president of the company is Charles G. Wilford, an old honey man, who knows the product thoroughly. C. A. Schirm is field superintendent, probably looking after the buying and the handling of honey



Mr. Wilford states: "Our business was established and is maintained on the principle of paying a good market price to honey producers whose honey we buy, contracting for the output of every producer we can, paying cash for the honey when it is delivered."

"In eleven months," according to his statement of February last, "our business has grown so that 7000 tons of honey have been pledged to us by more than 1000 honey producers. We are shipping to thirty-four states and to Honolulu, Canada, Alaska, South America, Hongkong, Shanghai, Australia and London.



Opposite page shows filling, sealing, and wrapping the package.

Above center shows complete package.

contacts with the beekeepers. They have prepared to build a new building to house the business, which, if completed as arranged in the plans, will be an architectural gem and thoroughly suited to the needs of the concern. The building will be the equivalent of four stories and fully equipped for packing and storing honey. The funds for the venture come entirely from within the organization and there is no desire to sell stock, an important point perhaps to beekeepers who have seen other concerns boomed in the past.



The display of orange honey shown above won the ribbons which now decorate the jar as it appears on the market. Below, Phyllis Haver, star for Cecil B. DeMille, lends atmosphere to a beautiful product.

"The orange-replica stone jar is my own design. These jars, and the Grecian vase jars we use for some of our other brands, are made here in Los Angeles. Each one is carefully glazed inside and fourteen days are required for the completion of each jar. We also ship other brands of honey in various styles of glass. We do not blend any of our honeys.

"Our exhibit won the first prize blue ribbon and the sweepstakes gold ribbon at the recent International Honey Show at San Francisco, and the display won the first prize at the National Food and Household Show at the Ambassador Auditorium here last fall."

The warehouse of the syndicate is equipped with storage facilities to take care of the honey of all the producers of that part of the state. A storage rate will be charged of approximately three cents per case per month or a fraction thereof. In addition to this, there will be a small charge for loading and unloading shipments.

One entire floor of the building will be devoted to the syndicate's packing plant, which will be equipped not only to pack their own honey in special containers, but to pack in any kind of container for the individual honey producer at a minimum cost. In addition, they plan to pack honey in special containers for mercantile establishments, such as chain grocery stores, drug stores, and so on.

stores, drug stores, and so on.

It is hoped that by assembling a major portion of the state's crop in one place they will be able to command the price situation more or less, thereby not only working for their own benefit but for the benefit of producers as well. To attract the major honey buyers to one central storage plant is certainly a good idea. Let us hope that Mr. Wilford succeeds in his enterprise and that beekeepers familiarize themselves with whatever opportunity there is in it for them and give him all the support they can.

that the evidence that Bacillus pluton is the cause of this disease is rather circumstantial and inconclusive, due to a failure so far to cultivate the organism. Many years ago Cheshire and Cheyne claimed that Bacillus alvei is the cause of a disease, almost certainly the disease which we now know as European foulbrood. Of recent years affairs in bacteriology have been rather upset by the finding that micro-organisms change their size and shape to a remarkable degree, and Doctor Lochhead has evidence that Bacillus alvei and B. pluton are in fact merely morphological stages of one and the same organism. Certainly in the alvei condition this organism does not cause European foulbrood or any other disease, although Sturtevant has shown that alvei modifies the activity of the casual organism. Lochhead's work is still incomplete, but it is hoped that as it progresses it may throw light on a most obscure and puzzling disease of the brood of bees.

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Dr. C. E. Burnside, of the Bureau of Entomology, gave a further report on the disease of adult bees which he has studied and which is a septicemic condition previously unknown. Dr. A. P. Sturtevant, of the Intermountain Bee Culture Laboratory at Laramie, Wyoming, reported his work on the minimum number of spores of Bacillus larvæ capable of causing infection of a colony, which promises to throw some much-needed light on the peculiarities of the spread of American foulbrood in the apiary and in a region. A. Skorikov, of Leningrad, reported some interesting work on a new race or subrace of Caucasian bees which have a greater tongue length than have any of the other known races of bees, and emphasized the importance of such bees in the pollination of red clover. Now that adequate methods are available for a study of tongue length, it is to be expected that some important facts of this kind may be brought out.

Dr. S. H. Skaife, of Cape Town, gave a most interesting account of the development and progress of beekeeping in the Union of South Africa. where he has been located for some years and where he is vice-president of the National Beekeepers' Association. Dr. A. E. Lundie, a former graduate student at Cornell Univer-..., is now in charge of the gove. nment beekeeping activities of that country, and Doctor Skaife reported real progress under Lundie's administration of the work. The importation of bees, queens, honeybees and even of unsterilized beeswax is prohibited in South Africa for the purpose of preventing the introduction of dangerous diseases.

A paper by A. F. Gubin, of the Moscow Apicultural Experiment Station, could not be presented in full

International Good Will is the Keynote of the Great Cornell Meeting

A Report of the Apiculture Section of the Entomological Congress

By E. F. Phillips

DURING the week of August 12, there was held at Cornell University the Fourth International Congress of Entomology, the first of these congresses to be held in America. For the first time scientific apiculture had a formal place on the program, through the establishment of an apiculture section. The Congress was notable because of the fact that over 650 entomologists from thirty-five countries were present to take part in the program. On May 1 the Congress of the United States authorized the President to invite all countries with which the United States had diplomatic relations to send official delegates to the Congress, so that the Congress thus had official government sanction and support. The Carnegie Endowment for International Peace greatly assisted by supplying funds to bring eminent foreign entomologists over for the

Those familiar with the weather of central New York will scarcely be able to credit the statement that the weather throughout the entire week was perfect, so that we were able to carry out all plans in full, including many excursions to points of scenic and entomological interest in the Finger Lakes region. It was thus possible also to hold a picnic for the entire Congress on Tuesday evening at Taughannock Falls, on the shore of Cayuga Lake. Taking it all in all, it was doubtless the most successful meeting of entomologists ever held in any country, not only in regard to size and extent of program, but also for the universal good feeling and friendliness which prevailed at all times.

The apiculture section was begun

in a rather modest fashion with two sessions, but they were eminently successful. At the opening session, Dr. S. H. Skaife, of Cape Town, South Africa, presided, he being well known for his work on the bee louse and on various parasites of the honeybee which cause trouble in his country. Mr. W. W. Alpatov, of Moscow, more recently at the Johns-Hopkins University as International Education Board Fellow, reported his work on variation in length of tongue and other bodily parts throughout Russia. He has now made similar studies of bees from the United States and Canada and also from various other countries of the world. Our bees, not being native, naturally do not show a geographical variation comparable to that found in Russia. and, as might be expected, our black bees are sadly deficient in tongue length wherever measured.

Dr. L. R. Bertholf reported his interesting work on the responses of bees to lights of different and known wave lengths. Dr. George H. Bishop and his wife reported their work on sugar metabolism in honeyoee larvæ, this being part of extended program of research which they are conducting on the physiology of the larva. Mr. J. I. Hambleton reported his work on the effect of weather conditions on the flight activity of bees. in which he has eliminated the effect of weather on the secretion of the plants, a confusing factor in his earlier work.

At the second session, Dr. R. L. Parker acted as chairman. The first paper was by Dr. A. G. Lochhead, of Ottawa, Canada, on his work on the casual organism of European foulbrood. It is of course well known

because of a delay in getting his lantern slides through the customs office at Baltimore, but great progress in scientific apiculture in Russia was shown, a fact of which all investigators of all countries are now well aware. Doubtless no other country of the world has made the progress in scientific beekeeping which has been shown in Russia within the past few years.

Three times during the week Dr. L. R. Watson demonstrated his method of inseminating queenbees to groups that were almost too large for them to see his work well. Several foreign entomologists arranged to obtain Watson's equipment for work at home, so that an increase in our knowledge of the genetics of the bee is to be expected shortly.

An important feature of the apiculture section was a picnic for members and their families on Thursday evening. In some ways this was the most important event of the section, for it offered an excellent opportunity for us all to meet informally and to get better acquainted, and after all personal relations are of the greatest importance for those of similar interests and aims.

Previous to the Congress, officers of the International Apis Club had proposed to the officers of the Congress that hereafter in years when Entomological Congresses are held the Apis Club shall hold its annual conference at the same time and place as the apiculture section of the Congress. This proposal was discussed informally by the apiculture section and was unanimously approved, details to be left to officers of the Congress and of the Club. At the final meeting of the Congress it was voted that the Fifth International Congress shall be held in Paris in the summer of 1932. The Apis Club has already received a warm welcome from the beekeepers of France at the Conference held in Paris in 1927, so that the cooperation of French beekeepers is assured. It is therefore certain that during the summer of 1932 there will be held a great meeting for the advancement of scientific beekeeping, and all who can possibly scrape up the funds will find it well worth while to plan a trip to Paris for that occasion. Surely all who attended the recent meetings of the apiculture section resolved to allow nothing to interfere with that trip in 1932, and since foreign travel is now less expensive than formerly, we may have a fair American representation to share with beekeepers of all other countries the pleasures of a meeting in France four years hence. There can be no question that the beekeepers of France will give us a warm welcome, for they have on many occasions shown their readiness and willingness to act as worthy hosts to visiting beekeepers.

The Congress as a whole closed formally Friday evening at a banquet of great importance to the scientific advancement of international entomology, when Doctor Howard acted as the capable toastmaster. He called on representatives of all the countries represented, each to respond in his own tongue. It is highly improbable that any person understood all these toasts, including Egyptian, Hungarian, Polish and other tongues by no means familiar to most of us. However, no person present could fail to feel the prevalence of international good will and cooperation. International gatherings of this kind will do much to wipe out international differences and to bring about an era of better relations than have prevailed in the past, and they are worth the effort for this alone.

It was fortunately possible to hold over some of the visiting bee men for the picnic of the Empire State Federation of Beekeepers' Societies on Monday following the Congress. On Tuesday we started out for a trip through some of the best beekeeping areas of the state, closing the day by seeing the illumination of Niagara Falls, and on Wednesday we attended the picnic of the Western New York Honey Producers' Association. Even as late as the following Friday we still had one visitor, who went with us to the picnic of the Central New York Association near Syracuse, so that for almost two weeks we enjoyed ourselves together. It was strenuous work to plan for and to carry out the details of the Congress and of the allied events, but it was all very much worth while.

Colorado Beekeepers to Keep Production Costs

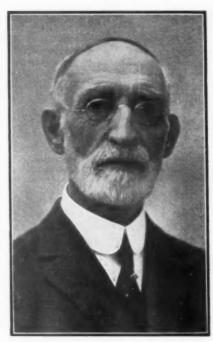
Beekeepers in the vicinity of Holly, Colorado, are to keep records showing the cost of honey production. These are to be compared with records kept in other sections of the state, and the best method of conducting the business will result. E. L. Seehrist of the Bureau of Entomology and R. S. Kifer of the Bureau of Agricultural Economics in Washington and R. E. Richmond, Deputy State Entomologist, are cooperating.

J. B. Dillon.

Honey Crop in Uintah Basin

The honey crop in the Uintah Basin looks very good this year, according to reports. Last year the estimated returns from honey was nearly a quarter of a million dollars. The Uintah Basin has long been known for its high quality of honey. Carloads of it are shipped annually. More than half the bees of Utah are found in this basin.

G. P.



Obituary—Lyman C. Root

We have received the announcement of the death, on September 6, of Mr. Lyman C. Root, son-in-law of Moses Quinby and reviser of Quinby's "Mysteries of Beekeeping" un-der the title of "Quinby's New Beekeeping." Mr. L. C. Root was born in St. Lawrence county, New York, in 1840, and was therefore 88 years old. He lived in Stamford, Connecticut, for the past forty-one years, and those of our readers who have been long subscribers of the American Bee Journal can find an account of the visit of our editor to Mr. Root, in the February number, 1917, of the American Bee Journal, page 85.

Mr. Root served in the Civil War, was educated at Fairfield Seminary, in New York State, attended the St. Lawrence University and was a graduate of Eastman's Business College, in Poughkeepsie. Our beekeepers know of his service to beekeepers know of his service to beekeepers.

keeping

He is survived by his two daughters, Dr. Stella Q. Root and Catherine H. Root. He was a member of the Universalist church, of the Stamford Horticultural Society, the Stamford Historical Society, the Grange, Masons, and Yacht Club. He was an active beekeeper and a practical man. He was one of the very few remaining noted beekeepers of the old days.

South Dakota Location

I see an inquiry about a location for bees in South Dakota. Now, Lake City, South Dakota, is a good place and there are not many bees. There are patches of timber, lots of water and sweet clover by the hundreds of acres. Land is cheap to buy or rent.

W. Curtis, Lake City, S. D.



DR. H. E. BARNARD, PRESIDENT

What Honey Does in Cake

An important branch of the baking industry devotes its efforts to cake making. In its desire to help bakers to better understand their problems, the Cake Section of the American Baker's Association has recently sent a questionnaire to its members by which it has learned why certain ingredients are used. One of the questions which was answered by leading bakers operating in twenty-four states was:

"What will honey do in a cake mix?"

Some of the answers were as follows:

It retains moisture.

It colors rapidly.

It keeps the cake soft and moist.

It has a distinctive sweetness.

It increases the volume of the cake.

It has a good spreading action.

It develops a "chewy" mix.

These are all good reasons for using honey in cake formulas, and American Honey Institute is preparing formulas for cake and bread bakers which will help them better to use honey in their mixes and doughs and by personal observation to see just how honey helps to make better goods which have the qualities emphasized in the inquiries of the Cake Section of the National Bakers' Association.

Carrying the Message

There are more than thirty thousand bakeries in the United States and a baker's trade paper goes into most of them. Indeed it is certain that the baker who does not read the excellent journals of his industry is, whether he wishes it or not, preparing to retire from business.

One of the most widely read journals, especially in the self-owned and operated bakeries, is the American Independent Baker. Beekeepers and all who are interested in honey will note with much satisfaction that the cover page of this excellent paper carries a picture of the various ingredients which the retail baker uses. And prominently displayed is a barrel of honey. The picture is more than a mere listing of raw materials, for it is supported by Ceres, the goddess of agriculture and civilization, and Proserpina, the goddess of flowers. It is wholly fitting, as the editor evidently well knows, that honey, the nectar of flowers and an increasingly important product of agriculture, should be provided our tables by bakers who recognize their obligation to these ancient goddesses.

Federal Funds for Honey Research

American Honey Institute is in complete accord with the beekeepers who at their recent meetings in western New York adopted resolutions urging the Department of Agriculture to give the same efficient attention to the scientific study of honey as is provided for dairy and meat products, fruits and vegetables, the utilization of farm wastes, and the development of new sugars.

Many years ago a series of analytical studies was made of the sugars, and among those investigated were the honeys produced in different parts of the country. Some time later honey was considered as a suitable sweetening agent for beverages, but the results of the investigations have never been put into practice. Working under the Bureau of Entomology, much splendid work has been done by the experts of the department in studying the problems of apiculture. And a recent contribution to the industry has been the establishment of the U.S. standard honey grades. Is it not high time for a complete investigation of all the phases of honey consumption, its varying composition and character, its adaptability as an ingredient of other foods, such as ice cream, spreads and butters, beverages, honey preserves, candies and confections; the possibilities of using it in the curing of meats, in new types of baked goods, in special foods for infants and invalids?

For thousands of years honey has been used in pharmacy. What virtues does it possess beyond those inherent in good and nutritious foods?

In many states all the honey produced is consumed locally and returns the beekeeper a satisfactory price; in other states, far removed from populous centers, the large crops go to market in competition with honey from other heavy producing areas or with imported honey, and sell far below their intrinsic values as sweetening agents. This unregulated competition, which depresses the markets and discourages the beekeeper, seems unnecessary in view of the fact that the per capita

honey consumption is little more than two pounds a year.

So it seems that studies of all these problems, chemical, manufacturing, economic, which relate to the use of honey might well be made a special concern of the Department of Agriculture. And if appropriations with which to carry on the work are necessary, they should be provided.

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The Congress, which each year is more appreciative of the value of scientific work, will not hesitate to provide the funds with which to equip and maintain research laboratories, and the special studies, we can say with complete assurance, will develop a larger and more profitable market for our annual honey crop.

Beekeepers have rallied with enthusiasm to protect their industry from legislation which they fear may work to its detriment. They may, with even greater prospects of securing positive assistance, follow the lead of New York beekeepers in working for legislation which will enable their scientific friends in the Department of Agriculture to come to their help.

Honesty in Trade

To all who manufacture or sell or eat foods-and none of us are outside of this list-the action of the Federal Trade Commission, in compelling the makers of soft drink powders to use honest advertising methods, is reassuring. Since honey is one of the foods which, because of its piquant flavor, its appeal through memory to other and earlier days, its delightful sweetness, has outstanding virtues from an advertising point of view, many unscrupulous manufacturers have not hesitated to use the honey name on their products although no honey was present in the formulas.

This is fraud-nothing else- in violation of the pure food laws and now, under the ruling of the Federal Trade Commission in a similar case in connection with beverages, a practice which must be abandoned. The case in question concerns "a manufacturer of powders used in making soft drinks who has been ordered by the Federal Trade Commission to stop advertising names of fruits as descriptions of products not composed wholly of such fruits or the juice of such fruits. Provision is made in the order for use of names of fruits with proper qualifications in instances where the product advertised contains substantial amounts of the fruit named.

Such names as "Cherry," "Strawberry," "Grape," "Raspberry," "Pineapple," "Ras-o-Berry," "Grape-Julep" and "Cherry-Julep" were used by the company to advertise soft drink powders containing none of the actual fruit named, but consisting princi-

(Continued on page 515)

Morrison Mixes Ginger with His Sales

C. J. Morrison, of South Bend, Indiana, is never heard to say that honey is difficult to market. He mixes ginger with his sales and never fails to produce results. In other words, by perseverance, hard work and good sales logic, he disposes of his crop without difficulty.

The pictures show his apiary, his promising little

family and the Reo speed truck in which he disposes of the honey, along with beeswax, maple syrup and sorghum. Morrison runs 150 to 200 colonies of bees, and, besides distributing his own crop, he handles the entire crop of a beekeeper having around six hundred colonies



of bees. Often he runs short and has to get other honey in addition.

In South Bend and nearby territory, he sells direct to the housewife, and outside of South Bend he sells at wholesale to the grocer.

He says: "If it wasn't for the chain store problem, I would prefer to sell through

the grocer altogether. I find it quite easy to sell the average chain store comb honey, but a bigger job to sell the bottled honey, as they prefer to get that through their warehouses."

Besides selling honey, he handles maple syrup and sorghum molasses, which sell very well along with the honey.

Morrison operates two trucks, keeps one man the year round and, during the selling season, maintains a large selling force.

Will Drug Stores Develop as Large Distributors of Honey?

By Virginia Caldwell

I WONDER if the drug stores of the country are going to develop intomore consequential distributors of honey?

This is not an idle wonder. Several things that came to my attention all tend in the same direction.

The Walgreen chain of drug stores in Chicago have featured honey in their One-Cent Sales. You bought the first little jar for a quarter and got the second for a cent—the two for 26 cents. It was advertised as "Genuine Idaho White Clover Honey."

Medical journals are discussing the value of honey as a food. Doctors who write the health columns for the syndicates that supply material to the daily papers have been publishing articles and answering inquiries as to honey as medicine.

I overheard a nurse telephoning a mother to use pure honey if her children had the whooping cough.

Leading beauty shops in Chicago

have been advertising "honey packs," the press associations have carried stories of how the Egyptians used honey in cosmetics, and a friend in Louisiana has sent me a clipping from the local paper giving a number of formulas for "Honey for Health and Beauty." I don't know the source of this last material but it is of the type that either is sent out by a syndicate or has been copied from paper to paper.

Quite a lot of honey can be disposed of by a chain like the Walgreen drug stores. There are at least fifty of them in Chicago alone and they are starting to open them in other cities, notably St. Louis. An important point is that their successful methods are closely watched by other chains and individual stores—and copied.

In the Therapeutic Gazette for May 15, 1925, I ran across an editorial headed "The Value of Honey as a Food." As it occupied a full page of that journal and is full of technicalities, I will only quote some significant extracts:

"In an editorial on this subject The Lancet (Note—The Lancet of London is rated as one of the world's leading, if not the foremost medical journal—VC.) of December 27, 1924, calls attention to a paper by Dr. Thomas as to the valuable properties of honey in providing a readily absorbable food. The properties of this ubiquitous substance do not appear to be set out in the usual works of reference...

"With regard to the vitamin content, it has been stated that honey contains both the fat-soluble and water-soluble principles, and is efficient in warding off deficiency dis-

"On these findings honey constitutes a valuable food, since it contains carbohydrates in a form suitable for direct absorption. The claim is made that honey never gives rise to fermentation in the alimentary canal, since the dextrose and levulose, being monosaccharides, are absorbed so rapidly that there is no time for bacterial action. This would commend it for infants and children. The fatty acids may have

their use in stimulating peristalsis and digestion. Honey, therefore, compares favorably with glucose, which contains only about 35 per cent of monosaccharide in the form of dextrose and lacks the valuable proteins, fats and inorganic salts which are present in honey. It would appear, therefore, that Dr. Thomas's plea for the extended use of honey has sound biochemical basis."

Not quite so favorable was the reply made to an inquirer, by Dr. W. A. Evans, whose "How to Keep Well" is supplied to newspapers from coast to coast by the Chicago Tribune Syndicate:

"T. N. writes: A day or so ago I noticed under the caption 'Honey as a Medicine,' the statement made by a Portland physician that a table-spoon of honey in a glass of warm milk, taken several times a day, was an ideal remedy for anemia. Is that

correct?"

The reply was: "No. Honey contains a form of sugar that is more readily absorbed than cane sugar. That is about all there is to say."

There is little to add to the incident of the nurse recommending that the mother use honey for whooping cough, except that the nurse was heard to say, "NO, I CAN'T TELL YOU WHERE YOU CAN GET ANY PURE HONEY." Someday, when honey marketing is thoroughly organized, there may be educational advertising in the nurses' and hospital journals something like that run in those publications by marketers of other foods.

Now as to the affairs of the toilet. They get \$1.50 from Milady, when she wants a Honey Pack Massage in one of those beauty parlors that spell it "shoppe." This treatment is advertised as "removing wrinkles, closing up pores, and bleaching the skin."

There seems to be nothing exclusive in the use of honey for making women attractive, according to press reports of discoveries made in Egyptian tombs by the Egyptian Department of the British Museum, although the maidens of old used it in radically different modes.

"Women also chewed special pills made of honey to keep the mouth sweet."

"For instance, to strengthen the hair, one rubbed it 'with the tooth of a donkey crushed in honey."

Far more practical is the advice given to women in the "Honey for Health, Beauty" clipping sent from Louisiana. I mention that clipping because newspaper experience tells me that the town and paper are too small for such an article to be locally written and it must be used in many other communities. This article gives recipes for using honey for relief from chapped hands and in

cold cream, besides telling of its laxative and other healthful properties.

In the case of other things mentioned in the pages of local papers that are most read by women, drug stores have experienced calls for the materials recommended. With the physicians paying more attention to the properties of honey and a leading drug store chain distributing it in quantities, it does seem that the drug store may become a more important factor in marketing.

Laying Worker or Small Queen?

I was very much interested in the article in the August Editor's Answers, page 406, from the Indiana man, as I had just such an experience.

I had a colony of very black bees two years ago that had dwindled badly. I ordered a queen to replace the black queen and looked through the combs very carefully, but could find no queen. The black bees run so wildly over the combs that it is very difficult to see her.

Well, I looked every day for a week before I found her. You should have seen her. She wasn't more than half the size of a worker, but it was a queen sure enough. Just as well shaped as any, but, oh, how black!

This queen had kept the colony population up pretty fairly the year before and was probably larger than when I saw her. I think if your correspondent from Indiana will look carefully for a very small bee, he will find that it is not a laying worker.

C. W. Fitzsimmons, Iowa.

Requirements for the Production of High Class Honey

In writing in the New Zealand Smallholder for March 16, T. Best, runner-up in the Hopkins memorial competition, writing under the title "The Economical Production of High-Class Honey for Export," gives a very good summary of the principal things to be considered in producing the very highest type of honey for export trade. His summary at the end gives the main consideration, and we reproduce it here:

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- 1. Standardized yard equipment.
- 2. Best bred bees.
- 3. Yards located in a district which produces only high-class honey.
- 4. All yards laid out for easy access to each hive.
- All yards clean of growth and all hives facing north. (In the northern hemisphere we face hives south. —Ed.)
- 6. The central yard located close to railway or good roads.
- 7. A large honey house with concrete floor, in which to carry out the work of extracting, canning, casing and storing crop ready for shipping.
- 8. An up-to-date plant with which to handle the crop from the hive to the truck.
- 9. A one-ton truck for carting, of which there will be a considerable amount.
- 10. The knowledge and will to give our best in thought and work.

Then we may reasonably expect to produce a high-class honey for export in the most economical way.

Along the Red River in the North



From St. Jean Baptiste, Manitoba, comes the above picture of last year's honey crop. From the reports received, the northern sweet clover region has a bumper crop, while the clover region to the south is derelict this year, reports of 25 to 50 per cent being the most encouraging ones sent in.

St. Jean Baptiste is about thirty miles north of the Dakota line, along the Red River, south of Winnipeg. The average is about 170 pounds per colony in the apiary of George E. Bissonette. This is the home yard. Very pretty

500

The Value of Good Combs and Having Them Built

By Jes Dalton

M OST beekeepers have a vague idea of the value of good combs, but I venture the opinion that very few know the art of getting them most perfectly drawn, or are willing to take the pains required for the best results. In my experiences the past couple of years it has been my good fortune to have at my disposal almost every make of foundation, and to fit same in every make of frame and try them out in colonies of bees of varying strength, in changing seasons and conditions. I am not entirely in sympathy with the cry of "Swat the drones" to breed up good bees. (1) You have to have plenty of drones, and if you do not raise them your neighbors will, in their "semibox-hives." But raise your drones in abundance with regular marked drone combs in the colonies you wish to breed from.

I believe that some of the commonly accepted ideas of placing supers on bees, and frames in the hives, are as out of date as the placing of frames in hives with STARTERS IN THEM ONLY. I have before me a sheet of instruction that came from one of the manufacturers of foundation. It says, "One or more sheets of foundation may be given at a time in the brood nest." I doubt the advisability of such a statement.

Never put a sheet of first-class foundation in the brood chamber and expect to get a good comb. In most

cases it is not a great deal better than using starters only. To get firstclass combs drawn, place them one and two at a time in super in any kind of flow. When you have to super a colony, do not lift up a frame of brood or two and put them in super, replacing with foundation in brood nest, as is commonly advised, but place your super on this colony and then borrow a couple of drawn combs of honey from a super of a stronger colony, putting the frames of foundation in the super of the two colonies, and place the drawn combs in center of super with a sheet of foundation between them. As they start to work, you may move these already drawn combs to the outside of super.

Always work on this plan in supering. It gives the one being supered a boost by giving it combs already worked, gives added strength to those which had brood in them, and places the sheets of foundation in the super of the stronger colony instead of in the brood nest of the weaker one. Pursue this plan with all the supering and you will be astonished at the different results in the quality of combs drawn, as it gives all sheets of foundation to strong colonies instead of to weaker ones.

It is a little extra work, but it gives one the value of combs with no drone-cells along the bottom or empty space for them to be built.

Once a yard is established, one can have "store colonies" with extra combs stored on them to use in brood nests to save placing foundation in them. In buying frames and foundation, examine the sheets of foundation for length, width, etc., and the end bars of the frames. All frames cut for standard hives must have an outside standard measurement to the smallest fraction of an inch. If space between foundation and end bar is too great, bees will not fill it up, no matter what foundation you use, whereas if the space is well filled the bees will build solid worker comb to the end bar.

Louisiana.

The Frow Treatment

It was in the late autumn of 1927 that Mr. R. W. Frow, of Wickenby, Lincs, England, first announced the details of his remedy for the treatment of acarine disease. His formula for the liquid mixture, which he advocated putting on a porous quilt above the cluster, showed it to contain two parts of nitrobenzene, one part oil of safrol, and two parts of petrol. We have here, of course, highly poisonous and inflammable ingredients, which suggests that this remedy should be strictly confined in its application to responsible and experienced persons, until such time as the details of its technique have been standardized and the attendant risks minimized. During last winter and spring the Frow treatment of acarine disease has been subjected to official and private tests in various parts of the United Kingdom, and the results announced to date certainly appear indicative of initial success. Colonel H. G. Howorth, of Bideford, has sent us a summary of his experiments with some twenty-five infested stocks. which as a result of the treatment have been rendered almost entirely free of live mites. As he points out in his accompanying letter, these trials were all conducted on wintering stocks and he is at present extending his experiments under brood rearing and surplus honey conditions. He hopes, as a result, to add considerably to our knowledge of the effectiveness of this treatment and possibly to make some definite recommendations for its successful carrying out. Other readers have also advised us that they are putting it to an exhaustive test this summer, and we shall hope in due course to put the results of their investigations before our readers. It is to be feared that acarapis woodi is still taking heavy toll of our stocks, and any treatment that offers the hope of our controlling its ravages merits our serious attention. - Bee Craft for August, 1928.

At Pacific Foreign Trade Exposition

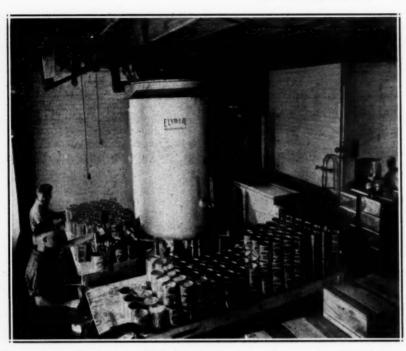


George J. Triphon, of Dixon, Solano County, California, makes claims which it would be hard to dispute, since they are true. They also make quite a hit with any consumer who may read them. Sweepstakes for three years and an annual crop of over 200,000 pounds.

His display at the Pacific Foreign Trade and Travel Exposition, at San Francisco, attracted considerable attention. A good way to advertise.

The Care and Storage of Honey

By M. H. Mendleson



Interior of a modern honey packing plant showing great storage tank. Many beekeepers have smaller storage receptacles, in warm, dry rooms

THE proper care and storage of honey I consider a very important matter in our line of business, as we produce quality. We should preserve and improve to the highest degree cleanliness, neatness, attractiveness previous to storage, and the same should apply to storage if we wish to increase consumption.

A few months ago I called on one of our large bottlers of honey and noticed a number of tons of extracted sage honey in cases upside down; the bottoms of the cases were decayed and the sixty-pound cans were rusted through to the honey. This honey was bought at a loss to

A thin shipping case, without cleats, often arrives in the above condition. Not a good advertisement for any producer.

the producer of over \$40.00 per ton under the market price.

At another time I saw a carload of nice looking section honey stored that had fermented through the cappings and was sold at a sacrifice, as it could not be restored to its former good condition. This was almost a complete loss. These are a few examples of the improper care and storage which could have been avoided if the producer had known the conditions.

I should not consider storing unripe honey unless it went through an evaporator. Even an evaporator will not restore it to its natural flavor. I used an evaporator for twelve years near the coast, in a damp atmosphere, but I could not produce nature's quality by artificial means.

Ants are another problem in storing of section honey, the Argentine ants being the worst, as they are almost invisible. I have had them even go through a cork. Cases should be moth and ant proof. Ant powder should be freely used on small ants. Poison is not altogether effective. especially on the larger ants, as we have a number of varieties here. We have red stinging ants that are very hard to exterminate, as they spread under the surface of the ground and carbonbisulphide will not reach a whole nest of them. They give me much trouble, as their sting is the worst of all, compared to bee stings, and the pain is intense, lasting sometimes ten days.

Concrete of any kind, brick or rock buildings draw dampness and are not a favorable storage place for comb honey. It requires a dry, warm, odorless storeroom, if stored any length of time, free from vegetables, fruit. etc.

Extracted honey should be stored in a clean, dry warehouse. Skylights facing the sun are an advantage. If forced to store extracted honey in concrete buildings, joists placed underneath the rows of cases, with a draft of air circulating, will partially prevent the cans from rusting. Cans should be entirely free from any stickiness. Screw caps should be air tight and free from the least bit of honey or dampness, or they will rust and become unsightly. A well-painted wooden warehouse is the best for my location and will apply to the East, too.

If all honey were properly cared for, consumption would increase. regret to see poorly flavored section honey on the market. This is a mistake, as the public demands quality. Poorly flavored honey should not be put into sections and should not be blended with good quality honey. Not enough effort is taken to inform the wholesaler, and especially the retailer, as to the care, storage and display of honey. That would greatly increase the consumption; again, the trade demands quality, and we cannot increase consumption by indifference and extreme carelessness. A neat package with the contents to conform to the package, or even better, if possible. California.

Bees and Cocoa in Costa Rica

By Edward Kellner

Everybody who eats bananas is indirectly connected with the United Fruit Company, the big American concern controlling banana imports all over North America and Europe.

Besides banana plantations, this company has large estates planted in cocoa, consisting of thousands of trees. Attracted probably by the favorable results of putting colonies of bees in blooming fruit orchards to get better fertilization, the company decided to try a similar experiment on cocoa in 1920. The problem of cocoa fertilization is a strange puzzle and even now is not entirely solved. The problem justified a trial whatever the results might be.

An experienced bee man, a Jamaican, James White, was hired in January, 1920, to take care of the bees, make increase and, above all, to observe the behavior of the bees on the blossoms of the cocoa. Twenty-five colonies were placed on the

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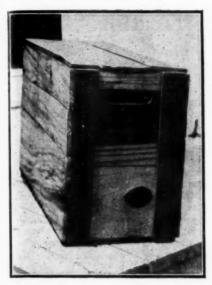
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A well built case is worth the investment. One feels safe and the buyer certainly gives it his approval, as the honey arrives intact.

Columbian farm at Zent, the main cocoa district, and eight on Bristol farm. The bees were hybrids between blacks and Italians, bought nearby. Later the company ordered a pure Italian five-banded queen from the States, which White used in raising all the queens necessary for his increase.

Some time after the first of January of that year, all colonies were brought to Zent and the experiment continued. It was the first and only trial of bees commercially on the Atlantic slope. Even to the experienced tropical beekeeper the possibilities of commercial beekeeping on the Atlantic side seemed entirely unfavorable because of the excessive rainfall the whole year through.

In Zent, White began to increase by making nuclei with three or more frames, giving them daughters of the imported, five-banded queen. In October, 1920, the apiary numbered over 125 colonies. In the meantime colonies were moved to the other farms with large acreages of cocoa.

It must be emphasized that no plant except cocoa can be found on the plantations within reach of the apiaries in sufficient number to be of any importance, except the common shade tree, Guabotree (Suga lawina), belonging to the leguminosæ. From this source the main honeyflow must come, beginning in March and lasting till June.

With a four-frame, reversible hand extractor, White extracted 150 gallons from forty colonies. The honey was very heavy, from light amber to amber in color, and of an agreeable, though somewhat strange, flavor. Cottonseed oil drums thoroughly cleaned were used as honey tanks, and the honey, though but slightly covered, remained for weeks without crystallizing or fermenting, in spite

of the high humidity. Put up in sixty-pound tins, the honey sold for 4.80 colones per gallon, whereas honey from other sources was offered at 3.25 colones per gallon. (Four colones equal \$1.00.)

The second flow lasted from August to October and was not as great, seventy-five gallons from fifty colonies. The honey was of a dark amber, heavy in body and had a pronounced strong flavor. Its source is not known.

During all the months of the year enough honey is coming in so that brood rearing is carried on constantly. January and February, commonly known on the Pacific slope as the finest months of the "verano" (spring), on the Atlantic slope are just the opposite, bringing cloud-bursts and rains.

Despite close observations on all the cocoa farms where bees were kept, not a single bee could be found even visiting the blossoms, so it became well established that cocoa does not depend on insects like the honeybee for fertilization.

The trial has met with failure and the company's interest in bees stopped at once. White was discharged, bees were given up and moved to picturesque Pejivalle farm, more than a thousand feet up in the mountains. At present only fifteen colonies are left.

Is American Honey Dirty?

Foreign propaganda against American honey as being dirty is being met by a number of the states arranging to include sanitary inspection of honey houses along with the other duties of the State Specialist

in Beekeeping. Of course, honey is not unsanitary anyway, but, like Cæsar's wife, it must be free from any taint of suspicion. It will be well for any careless producers to begin to clean up their place and practice. Forewarned is forearmed.

Apropos of the above, a German buyer of honey was over here recently and was shown some of the best apiaries in the United States, as well as some that were not so good. He has gone back, enthusiastic over our honey, realizing that we are setting a standard which we expect to live up to.

Don't Get too Familiar with Beeswax

Another fire caused by wax boiling over and burning!

A short time ago Caldwell, of Colorado, lost his honey house from that cause.

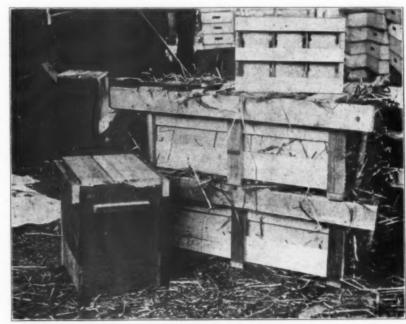
Now, Stark, of Idaho, has had a fire, burning up his outfit and 23,000 pounds of honey. A boy forgot to turn off an electric hot plate when he closed up the place.

Believe me, that place is a pile of junk. Extractors, tanks, carload of cans, and what not, besides all that honey destroyed. There is not a scrap of wood left of the house.

But they did save his truck and he is at work again in an empty garage and piling up a nice lot of honey.

And listen! All this honey, as Stark is in the Mountain States Association, was insured, automatically, and was not a direct loss to him.

Reporter.



Comb honey handles best in carriers, cushioned with straw. It will ship well this way also, without damage

Apparatus for Use With Formalin Treatment

By Jay Smith

SINCE the articles on "A New Formalin Treatment for American Foulbrood" appeared in the American Bee Journal, I have been receiving a great number of letters from big beekeepers all over the United States and Canada asking for information about different apparatus for sterilizing combs. This confirms my former belief that American foulbrood is one of the beekeepers' largest problems. As I have not experimented on anything other than the hive body, any advice I might offer is purely theoretical. But as I have given it considerable thought, I wish to describe different styles of apparatus that might be used.

First, I wish to describe what appears to me to be the best box or tank for fumigating combs. It would be much more expensive than using the hive bodies as first described. But so many have written that it would be such a saving in time if a box or room could be made gas tight in which the hives could be set that they would prefer it even if the expense were more.

I am having a small experimental outfit made like that shown in cut. I believe it would be extremely effective and the cost of sterilizing badly infected combs would not exceed one-half cent per comb and less than one-fourth cent for extracting combs. The cost of the apparatus would be considerable and the interest on the money invested would probably equal the cost of the formaldehyde unless one had a large number of combs to treat, in which case the cost would be much less. Several beekeepers could own one or two tanks, which would reduce the cost. The labor cost would be practically nothing.

The tank as illustrated can be made any size. I believe it would be better to have two small ones than one large one, for it might be desirable to open one to take out a few combs, and the loss of gas would be less from opening the tank than would be the case if a larger one was opened. The one illustrated holds thirty-six hive bodies. The experimental tank I am making will hold but twelve.

The tank is to be made of heavy galvanized iron riveted and soldered to be air tight. The cover will have a projecting rim six inches wide to fit in a groove around the edge of the tank as shown in the cut. An extra piece of galvanized iron is riveted on around the tank and the seam soldered. In this way the rim of the cover telescopes over the tank and extends down into the groove. To make this gas tight, this groove is filled with used crankcase oil. Four handles are riveted to the cover for convenience in lifting off the cover. Some 2x4 pieces run lengthwise on the bottom for the hives to rest on.
There should be a space of four inches at the top over the hives to allow free circulation of gas. The groove or trough should not come to the top of the tank, for where the tank is left outdoors a heavy rain would force the oil into the tank. Several gallons of formaldehyde can be poured into the tank after the combs are placed in, and the evaporation will be sufficient to sterilize the combs in two weeks time if the weather is warm. The formaldehyde left in the tank after the combs are removed is used for the next set of combs. If the sun is too hot, shade must be given to prevent melting the combs. Tank should be painted, for the gas will rust the iron. An addi-Tank should be painted, for tion to this tank, that will be a big improvement, but costing more, will be a vaporizer, shown in the cut. A boiler holding two gallons is located just below the tank and connected with pipes as illustrated. A gasoline or oil stove is used to provide heat. As the formaldehyde is vaporized it condenses on every part of the combs and enters at once all open cells. If cells are capped the gas will enter, but will take more time. I do not know to what extent it will sterilize capped honey, but would recommend all be uncapped. The little experi-menting I have done indicated that capped honey is sterilized, as no disease recurred, but I would not recommend that any capped honey be left. The gas penetrated the brood cappings quite readily. When the air within the tank will take up no more gas, it condenses and runs back into the boiler to be again vaporized. A strainer should be provided to prevent anything from running into the boiler. If the weather is cool, the stove may be kept going, which will raise the temperature within the tank. After treating, the hives should be set out to air for two or three days before given to the bees. Several have asked if I did not play safe by not recommending a shorter time than two weeks. I confess I do not know how long, or rather how short, a time will do the work. It may be a less time will do. Further experiments will have to demonstrate this fact.

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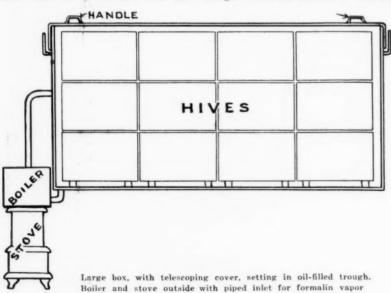
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Many have written, making valuable suggestions and I pass them along so that those so inclined may experiment.

P. E. Crane, son of J. E. Crane, proposes to make a tight room, lining it with wallboard and paraffining the board, then using a tight-fitting refrigerator door to make it tight. A steam pipe will be run inside to keep the temperature high. This will work, I feel certain, provided it can be made gas tight. One coat of paraffine would not do, I am afraid, but if two or three coats were used it ought to do the work. If plenty of formaldehyde is used it would be effective even if a little escaped, but the cost would be more if much gas got away.

Emilio Hernandez E Hijos, of Cienfuegos, Cuba, proposes to make a number of wooden boxes six feet each way and make all gas tight and place pans of formaldehyde in them. I should think it would be difficult to make boxes tight, and especially the covers. Any room that can be made tight will do.

Earl C. Reed, of Wyoming, suggests that a bee cellar could be used when not occupied by the bees. If



the cellar were made entirely of concrete and the concrete painted so it would not absorb gas, I do not see how it would fail. A trap door could be used and dirt piled a foot thick over the door and the vapor sent in with a boiler. It would be well to have the floor slant toward the boiler, which should be below the bottom of the cellar so the condensed formaldehyde would return to the boiler. But whether this room could be freed from the fumes within a month so that bees could live there during the winter, I have some doubts. One argument in favor of the tank in place of room or cellar: In the open air, with a breeze, the combs could be handled with no discomfort, but in a room or cellar the gas would make it difficult to go in. I have heard that the army gas mask will give protection. If that is true, it would solve the problem, as they can be purchased at army supply

An amusing experience along this line happened a year ago. In the honey house I was experimenting to see if formaldehyde would keep waxworms out of combs. I stacked up five hives and in an empty super above I placed a saucer of formaldehyde. I did not make the joints tight, so a little escaped into the room. One day a man went in there to have a look around. In a jiffy he came tearing out with tears running down his cheeks and a look of horror on his face. He was certain he had been fatally "gassed."

Indiana.

Small Queens

By J. C. Balch

As Indiana, on page 406 of the August number of the American Bee Journal for 1928, wanted to know if anyone else ever had a case like his, of a very small queen, I wanted to tell him that I had one away back about 1877 or 1878. I was then living at Edgerton, in Johnson county, Kansas. Mr. B. F. De Tar and I were engaged in raising Italian queens for sale and had an outyard on the prairie where there were no bees within six miles of it in any direction, where we took our young queens to be mated, also hatched a lot of them out there. We had one colony that hatched and cared for a lot of queens, and we thought we would give them a queen and let them rest and build up. We gave them a nice, large, laying queen. Two days later we found her dead; then we hunted for a young, infertile queen, but could not find any, and we were used to hunting queens, too.

We gave them another, caged, with a full quota of feed, and in four days she was out and dead. Then we went over that hive again, but

found no queen, so we decided to break up that colony and strengthen some others for queen rearing. When the time came, we opened the hive and found eggs in the hive, and as we were very busy at that time we closed the hive again. We waited a week, then found the hive full of eggs and larvæ. Then we got out a search warrant and hunted the hive over three times, but we found her, and she was not as large as a goodsized worker, but a little longer. I was for killing her right there and then. But Mr. De Tar said if she can lay eggs like that, let's give her a chance. She had as strong a colony as we had that summer, which wintered well and was the first hive to swarm in the spring, and left for

parts unknown, but the queen-cells she left hatched normal, full-sized queens. Then I had a case just like it out here in Washington two years ago.

Death of S. D. Chapman

We learned recently of the death of one of Michigan's oldest beekeepers, Mr. S. D. Chapman, at Mancelona, Michigan, on August 12. Mr. Chapman has for many years been one of the outstanding beekeepers of the southern peninsula of Michigan. He kept for more than forty years as many as four hundred to six hundred colonies of bees and produced large crops of honey, mostly extracted.

INTERESTING PERSONALITIES

X. J. KENNEDY

X. J. Kennedy, of Lawrence, Kansas, is a very busy person. Besides his several apiaries, he is county commissioner, manager of a large plumbing establishment, and partner in a bee supply business. With his son he keeps bees on a rather extensive scale and, to a large extent, sells his honey in the local market.

The picture shows Mr. Kennedy with Mrs. Kennedy in the garden of their home. Here there is a very real partnership, for both Mr. and Mrs. Kennedy are great lovers of flowers.

You never really become acquainted with the man until you see him

in his garden. There is an amazing variety of flowers; dozens of species of native Kansas wild flowers are growing along with the peonies and iris. There are hundreds of named varieties of cultivated flowers, and this fact is appreciated by a large number of persons in the vicinity, as is evidenced by the many visitors at the blooming season.

If your hobby is bees, you will find Kennedy interesting, for he is a real enthusiast and he knows how to produce a good crop of honey and to get a good price for it. If you like flowers you will enjoy a visit to the Kennedy garden at almost any season, from April until October.





Pollowing the morning session at the Kansas beekeepers' meeting at Manhattan, February 9 last, I found myself in a cafeteria, seated at a table with Dr. Parker of Manhattan, Mr. Sechrist of Washington, A. V. Small of Augusta, R. R. Fooshee of Piedmont, Kansas, and J. F. Garner of Sabetha. It was a great bunch (with one exception).

Dr. Parker has a sense of humor. Sechrist bantered him: "What was that story your wife was telling on you this morning?"

"About the sweet corn?"

"Yes, and that newspaper re-

porter."

"Well, you see it was like this: Mrs. Parker keeps tab on the doings of all the club ladies in Manhattan, and every Tuesday a reporter comes around to get the news. This time Mrs. Parker wasn't home and I had the interview with the reporter. I hadn't any idea what the club women were doing, but told the reporter Mrs. Parker had just found a delicious way of cooking sweet corn; that by adding a tablespoon of extracted honey to the water while the corn was cooking, it gave it an exceptionally fine flavor. Of course, Mrs. Parker didn't know anything about this until the next time she went to club and a half dozen different ladies told her how much they enjoyed the corn cooked by her new recipe. You can well imagine the little scene that night."

(This recipe really is extra good .-

Editor.)

The day before the above conversation, it happened that I had mentioned one very poor season at Hamilton, Illinois, when we had to feed 16,000 pounds of sugar syrup to keep our bees alive until the fall flow. Mr. Garner asked how we managed to do all this feeding and keep the bees from robbing.

"Well, that was a problem, Mr. Garner. We used the ordinary friction-top, five-pound pails as feeders, mixed our feed at the home yard and carried it in five-gallon, new kerosene cans to the outyards, estimated the amount needed and poured the required number of feeders, inside the honey house, with the door shut.

"The feed was put on just at dusk, but even with all this precaution we had considerable robbing before the feeding period was over. We hardly dared open the hives for fear of robbing. I presume there is a better way to do it. What would you suggest?"

A New Way to Feed Bees

"Well, we have worked out a plan

at Sabetha, Kansas, which I believe is somewhat of an improvement," said Mr. Garner.

"We take a truckload of empty hive bodies with supers and a quantity of newspapers with us to the yards. Four men can work to best advantage, using this scheme. Go through the yard as quickly as possible, lift each hive and mark those that seem to need feed.

"Then work it as follows: One man takes off the cover of the hive to be fed, jarring the bees off on the ground. The second man covers the hive at once with newspaper. The third man sets an empty super or hive body squarely and firmly on the newspaper, and the first man replaces the cover.

"The entire time required to complete this is less than five seconds to each hive, and the interval of time when the hive is exposed to robbers after taking off the covers and before putting on the newspaper is less

than two seconds.

"When all the hives that need feeding are supplied with empty bodies above the newspapers, we begin putting on the pails of feed, giving each colony one or two ten-pound pails of the usual solution of sugar and water, turning the pails upside down on the newspapers, with a few pin holes punched through the paper.

"In a few hours the bees enlarge the pin holes, cut away the paper and get at the syrup. There is no more opening of the hives. The bees get the food so gradually and so naturally that there is very little ex-

citement.

"You mention four men. What

does the fourth man do?

"I was the fourth man and worked just ahead of the other three. My job was to lift all the hives and mark those that needed feeding. After we got onto the scheme we could handle a yard of fifty colonies in about twenty-five minutes. In fact, our records show that we were just about a half minute to the colony right straight through. The biggest job was to haul out the feed and empty supers."

This Path to the Bees Is Not Uncommon

"Mr. Fooshee, how did you happen to choose beekeeping as a business?" "I didn't choose to keep bees; Coolidge is the only man who chooses.

Coolidge is the only man who chooses. We had had a few colonies of bees for several years and raised our own honey and some to sell, but had never thought of trying to make a living out of them. One night a whole bunch of us farmers went down to

the schoolhouse to hear the extension man talk. I believe he called himself an agricultural statistician, and when he said 'incomparable' he only pronounced about half of it. He made up for this by saying 'recapitulation' a great many times. init

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"He was an enthusiastic cuss and of course it wound up by a lot of us trying to keep books on our farm operations. That year turned out to be a good year for the bees and a poor year for general farming. When I balanced up the books at the end of the year, I found that our best hive of bees had made four supers of honey, which was sold at retail, and the amount of money was just about equal to the net profit from a fourteen-acre field of oats after deducting the labor and expenses.

"You see I didn't choose to keep bees, but entered the bee business as a result of trying to keep books."

Then Mr. Small, who insists that horsepower is more important than brains, gave the following experience:

The Practical Side of Keeping Books

"Bookkeeping is something I have never been able to learn. Last winter I persuaded the bookkeeping professor of our local high school to come down and see if he could tell me how to keep a set of books. He's a fine fellow, and laid out what I believe must have been a good system. He said the most important thing was to be able to determine what you had done with the money, and suggested a set of expense columns with various headings for each column, such as personal expense, honey production, honey bottling, bee supplies, automobile, postage, and so on.

"Well, I drew lines on a sheet of paper and wrote in the headings just as he said. Then at the end of the year he came down to help close up the accounts. He hadn't told me to write anything in the columns, and of course at the end of the year they were all blank. He said he supposed I would know enough to do that. But how could I know when he didn't

tell me?

"He said he guessed we would just have to give it up and get along without keeping books. I couldn't make out for sure, but believe he was just a little sarcastic when he asked how I expected him to add up columns of figures that weren't there.

"When it comes to actual practice it seems that, in everything you do, there is some darn technicality that will either make or break you.

"The first technicality was neglecting to fill in the expense columns as we paid out the money, but the second technicality was that we had paid all the bills by check and, in addition to the check number, we had placed on the check the expense column

initial. By taking the checks for the year and dealing them out into piles according to the expense column initials we were able to fill in the

columns.

"I guess I don't like to figure very well; at any rate it looked like an awful job. So I finally snapped a rubber band around each pile of checks and ambled down to the bank. I told the banker we had a good season - in fact we had a few more bottles of honey than we knew what to do with. Handing him a jar of our finest honey, I told him I had intended to go down and throw that one in the creek, but if he wasn't too busy he could find time to throw it in the creek for me. He assured me he wasn't busy and would be glad to see that the honey was properly disposed of. Then I asked him if one of the boys in the bank would have time to run some checks over the adding machine for me. Of course they would. 'Here, John, add these up for Mr. Small. Add each pile separately.'

"From their adding machine slips I could write the totals for each separate expense column without ever

filling in the columns.

"I was very much pleased, of course, because our whole bookkeeping for the year had been done without any effort on my part and the only actual expense was one sheet of paper to make the blank expense columns and two bottles of honey, one for the banker and one for John.

"We were all happy and, in an effort to pass the good system along, I explained to the high school professor how easy it was to add the columns of figures that weren't there and, if he would adopt my system, he could teach the students all about bookkeeping in just a few minutes, instead of spending a whole year on the subject.

"But, you know, I don't believe he appreciated all that I was trying to do for him. He just acted peeved."

G. H. C.

The Effect of Hive Paint on the Appearance of Bees

Yellow strains of bees in hives painted light blue or green appear much yellower. Gray bees in light yellow hives appear much grayer.

At one time we sold several colonies of bees to a neighbor who furnished his own hives, all freshly painted. Three times I transferred combs of our best copper-colored bees from our green hives into his white ones, and he stated I had not given him the yellow bees, and then it dawned upon me that the same bees that appeared so golden now looked very dark indeed against the flashing white background of his freshly painted hives.

T. Gorsuch, Maryland.

Beans, Brown Bread, Apples and Salad —with Honey, of Course

By Betty Bee

DEAR Sister Beekeepers: I have decided we women folk who are "in-laws" to bees all have about the same experiences. Our farm is on a national highway and our bees are down toward the front of the place, so the hives loom up conspicuously. I really believe every car, that was ever owned by a beekeeper, automatically turns in at our drive. In fact. I have noticed in our own drives two things invariably stop our "Lizzie." One is when she runs out of gas, the other when we come to a group of beehives. I think our Lizzie actually knows where beekeepers live, and, no difference how much of a hurry we are in, John has to climb out and talk a bit, which is from half an hour to half a day, depending mainly upon my patience.

So when a strange car comes churning up our drive, I know if it is not a honey customer it is a beekeeper and he wants to talk. I remember one day a summer or two ago a strange car came rambling along. They hailed from Oklahoma. The man got out, and after he and John exchanged greetings and wandered about the apiary a bit they sat down on the wheelbarrow under the plum tree and proceeded to talk. It looked like an all-day session, so I took the peas I was shelling and went out to the wife. We discussed the weather, the roads and the crops. Then as we shelled peas under the grape arbor, she looked at me thoughtfully and said: "Do you work with the bees?" "No, unless John is not here." "Can you hive a swarm?" "Yes." "Can you put in foundation?" "Yes." "Scrape off propolis?" "Yes." "Nail up frames?" "Yes." "Paint hives?" "Yes." "Get comb honey sections ready for market?" "Yes." "Ever extracted?"
"Yes." She looked me over quizzically. Then she said: "I knew it. Every beekeeper's wife has it to do. He keeps the bees-and does the talking!"

Yes, our Johns keep the bees and do the talking, every one of them. Beekeeping and talking seem to go hand in hand. Well, my John's talking gave me a fright the other day, but I believe it taught me a lesson. Let me tell you about it. On my cleaning day, the family know exactly what to expect for supper, something that can be fixed while I get breakfast, wash the dishes, and get lunch - baked beans, Boston brown bread, baked apples and salad. These can either be cooked slowly on the range or a bit faster on the oil stove. They take little attention, are nourishing, and can be put on the table by any of the family. This gives me all day to tussle with the cleaning.

That particular day, the house was all cleaned, I had just changed my dress and was putting supper on the table, when up drove the most beautiful car I have ever seen-all shine, polish and glisten, and so silent I quite wondered if I had suddenly gone deaf. John was out puttering in the bee lot, although what he really found to do there I cannot imagine. He met them, and, after so long a time, out of the car emerged a man fairly radiating prosperity, and a woman equally prosperous and magnificent. Wealth and city were proclaimed most emphatically. John talked, and continued to talk. waited, and waited, and WAITED. The children came in and washed for supper. John continued to talk, then the conversation grew nearer, nearer, upon the steps, the porch, and John's voice said, "Just come in. I want you to meet my wife. My bee books are right here."

So in they came, Master and Lady Luxury, and in plain sight in the dining room stood our supper, on our third best table-cloth and my everyday dishes. Of course I was introduced; the talk went on, but my wits were working overtime. " No, Mr. Luxury was not a beekeeper; but his grandfather had had gums, and his father had always wanted to keep Well, the long and short of it was, they stayed to supper, with the patch in the table-cloth and our every-day dishes! When we suggested it, Madam hesitated graciously, but Master said, heartily: "Nothing I would rather do. I've been hoping you would ask ever since I smelled your brown bread."

Bless their hearts, how they did eat, and how we all enjoyed it! Afterward, while the men continued to talk, she helped me clear up the dishes, and we talked, too. She told me about her girlhood, the little house where their babies came, and about her Bobby who never lived to grow up; and afterward my own Bobby sat on her lap and explored the contents of a most magnificent shopping bag and finally dropped asleep with his soft hair against her shoulder.

But what did we eat? I hear you ask. My regular cleaning day menu! Fortunately, I had prepared more than usual, but around the simplest board there is a magic about the romance of bees, and about honey itself. Baked beans, baked apples,

brown bread, and lettuce! Here is

how we prepare them:

Baked Beans-Sort, wash and soak in cold water over night one pound or so of navy beans. In the morning wash and drain. Cover with water and let simmer until the hulls slip loose. Then add a teaspoonful of soda, stir well, drain, rinse, and put into a pyrex baking dish or an oldfashioned, covered bean pot, if you are fortunate enough to have one. Cover the beans with water, add one tablespoonful of salt, one-fourth to one-half cup of honey, a slice of onion, and two or three slices of bacon, or a bit of salt pork, or, if you are vegetarian, a large table-spoonful of butter. Cover, place in slow oven and bake, adding just enough water to keep the top beans well moistened. While two or three hours of such baking is sufficient, the more they are baked and the more slowly, the more delicious.

Baked Apples-An apple apiece and a few extra for good measure. Wash, and cut crosswise, leaving the stems on the upper half. Take out the core from the bottom sections, set them blossom side down in your deep pan and drop six or eight raisins or dates and one teaspoonful of butter into the depression. After removing core from the upper half, put it on as a lid. Sprinkle each apple generously with cinnamon and pour over it a tablespoonful of honey. Put half a cupful of water in the side of the pan, cover, and put in the oven with your beans. Bake until tender and serve with the accompanying juice and a bit of cream or whipped cream, and you have a most delicious, appetizing and perfectly wholesome dessert.

Boston Brown Bread-While your beans are bubbling on the stove and you are getting your breakfast dishes washed, your cans of bread can be cooking. Mix and sift together one cup graham flour, one cup of corn meal (or two cups of graham flour is all right) with one cup white flour, one teaspoonful salt, one teaspoonful of soda and one teaspoonful of baking powder. To this add twothirds cup of liquid honey, two cups of sour milk, and a cup of raisins, if you wish. Mix well and pour into nicely buttered baking powder or tin coffee cans, filling each about half full. Cover tightly, but leave one or two small holes in the lid to let out any moisture. Put these cans in a dish-pan or kettle containing boiling water and boil for three hours, allowing water to come halfway up around the cans. Add more water if necessary. At the end of three hours remove from hot water and place in the oven with your beans for twenty minutes. If you possess a pressure canner, nothing is nicer to use as a steamer.

That was our meal, with plenty of butter and milk, and a generous helping of crisp lettuce, served with the juice of two oranges beaten into half a cup of honey as a dressing. Yes, we enjoyed the evening more than I can say. Indirectly we advertised honey to those good people; but, best of all, ' have learned my lesson. John shall hereafter talk bees all he wants to, for after all is it not right that our men who love the bees and are so interested in them should scatter the sunshine of kindly goodfellow-ship as they go? And who were our guests? I dare not tell you that; but no longer do they represent to me the wealth and magnificence of a great city, but just fine, honest gentlefolks interested in John's bees.

See if This Sting Cure Works

Some years ago, right in the heart of the great city of Pasadena, I "kept bees." Across the street Dr. C. H. Carter also monkeyed with 'em. Somehow we got wind of a "cure" for stings. We got hold of it. Half an ounce of fluid extract of ipecac, in a little bottle with a wad of surgeon's cotton around the neck, kept in place by a rubber, so as to have it handy.

At once when the stinger is scraped off, apply a bit of cotton wet with the extract (as big as the tip of your finger) and leave it to stick. If it comes off, do another turn. Absolute and instantaneous cure for bee stings! No ammonia nor patent decoctions whatever.

Now, Mr. Editor, get a sting quick, the usual natural way (you are no fraid-cat) and try it! I'll tell you how I know when you know by experience. I've "did" it from baby to bald pate. No, I don't know why, but it's so.

Mrs. Elizabeth Grinnell, California.

Sorry, Allen, the Palm is Yours

On page 413 of the August issue the statement is made that the first time queens were sent by air-mail was on July 12 of this year.

Allen Latham, of Norwichtown, Connecticut, writes: "It is more than a year ago that I mailed some queens via air-mail to a beekeeper in California. These queens were wrapped in such a way that the cages were hidden, and it is likely that officials did not know that there were queens in the package.

"Again, last June of this year, I mailed queens into northwestern Canada the same way.

"I do not understand the high postage spoken of in the article mentioned. Thus far the queens I have mailed have cost about 35 cents per queen, in spite of the fact that all cages were wrapped in strips of corrugated paper. The postage as reported is altogether too high."

Coster Says Hangover from Drinking Mead Cause of Row in Eden

In a newspaper account of a new book by a British writer, A. Vennel Coster, "The Love Story of Adam and Eve," he maintains that Eve was never made in the traditional way, out of one of Adam's spare ribs, but she was entirely a product of evolution. One day there was a mighty storm. Adam was watching a maelstrom of water, when he saw Eve come riding toward him aboard the trunk of an uprooted tree.

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At that time, according to Coster, Eve was but a babe, so big-hearted Adam took her, placed her in a cave with a strong door, and gave her the key. She grew up there, and Adam went to live with a lion.

But when Eve was grown, there entered the cave a serpent who moved with bewildering and exciting gyrations. Eve soon discovered that the serpent was partial to a food which she had found back of a palm tree. Some dates had fallen from the palm into a comb of honey abandoned by some bees. Small bubbles had gathered on the honey. It had been fermented by the dates.

Eve watched the serpent take a long draught of the mixture. Almost immediately it began to twist and turn and its eyes gleamed with passion and delight and Eve was overcome with emotion.

Adam arrived. There was the repulsive, detestable reptile with his beautiful Eve, whirling and dancing in the maddest of dances, while the presumptious serpent curvetted in fantastic spasms of emotion around her.

Eve told Adam she was fond of the serpent, and Adam thereupon made a scene, undoubtedly the first husband ever to make a scene. He sought out the palm tree where the fermented honey could be found and sought to drown his sorrows, drinking deeply. When Adam awoke, after a long sleep, he had a terrible headache. He called for water and Eve brought him a bowl of the same fermented dates and honey he had drunk the night before. Adam arose and eyed Eve savagely.

Eve is described as rushing hither and thither to escape the enraged Adam, but Adam struck her a fearful blow on the breast and another on the forehead; she fell bleeding and senseless to the ground.

Then came remorse. Conscience preyed upon them and finally drove both of them from the Garden of Eden. When Cain was born there was the mark of a blow on his brow and rage and cruelty were written on his face.

The Father of Movable Frames

Part I. Langstroth Finds the Secret

By Kent L. Pellett

THE invention of movable frames was a significant event for apiculture.

In their egress from the dark forest, men had taken bees with them and had kept bees for the matchless sweet they gathered. They had harbored them with solicitude, yet had ruthlessly killed them for their honey. This guardianship of the little insects had been their first dim groping toward husbandry. They had acted as handmaids to their bees, and had taken as a reward a yearly pittance of honey.

But, not understanding bees, men had inculcated them into their religion—as with all things which men do not understand—and had used honey in their ceremonials. And, for lack of definite knowledge, they had woven a pretty mythology about the

lives of bees.

One by one sages had arisen to dispel the myths; Francis Huber, the blind naturalist of Geneva, one of the last, and the greatest, had outlined their biology; and a modest German cure named Dzierzon had given further details to this outline by formulating the theory of parthenogenesis.

But, even with their growth of knowledge, men had still been subject to the whims and fortunes of their bees for the yearly harvest. Each beekeeper, with his few colonies, had sometimes reaped enough honey to supply his family for a year, and perhaps to give his friends

each a few fat combs.

In 1852, however, came a great change. Father Langstroth invented his movable frame hive, and through it men suddenly became masters of their colonies. By handling the combs they could strike the vagaries from the lives of the bees and center their activities on the harvest. With this new control they increased the honey harvests ten- and twenty-fold, and for the first time in history they had honey to sell. Apiaries grew to hundreds of colonies in the neat white homes, and beekeepers began to take their entire sustenance from bees. Factories were born and waxed to large size, making and selling nothing but bee supplies. Father Langstroth's invention had made beekeeping a business.

The movable frames were not unheralded, as men had tried for centuries to assume this control of their bees. The Greek bee folk of Mount Hymettus had used a crude sort of movable combs. Following them, leaders such as the Abbe Della Rocca, Francis Huber, the Russian Propokovitsch, and Debeauvoys of France

had made movable comb hives of varying ingenuity. But the bees, finding no place in their economy for movable combs, had always glued them fast together or to the sides of the hives, so they were no longer movable. The frames always fitted tightly, making it easy work for the little insects to apply their glue. The mass of beekeepers had found such hives of little value for honey production and had kept their old, crude skeps.

And recently Dzierzon had invented a hive with combs on movable bars, which under his nimble fingers gave almost perfect control of the colonies. But the sides of his combs had to be severed before they could be removed from the hive, and others, clumsier than he, who tried his hive, rejected it with the others. Beekeepers awaited the appearance

of a better hive.

The apicultural world was ready for Langstroth's movable frame; and Langstroth had prepared for it by

years of patient study.

His passion for bees had been with him from his early childhood, when he had disturbed his parents by playing with insects and using them for strange experiments. They had tried to curb his foolish propensities and his teacher had punished him for caging flies when he should have been studying, but he had continued to wear out his trousers by following his pets about on his knees.

Again, shortly after his marriage, when he had thought to have put aside his childish fancies for affairs of greater moment, a globe of honey on a friend's table, and swarms of bees in the friend's attic, had fired his dormant passion. When he had returned home it had been with two colonies of bees. Thus Langstroth

had become a beekeeper.

He was a young minister of kindly and intense nature, clothing all his interest touched with the bright cloak of his imagination. To few men was the world of the mind so real as it was to him. These traits, combined with his acute interest in humanity, his unquestioning faith in the goodness of God, and his naive, almost childlike manners, made him beloved of his congregation. But he was of poor health and subject to spells of melancholy which so afflicted him that he could not attend to his work for weeks at a time, even forcing him to resign his pastorate. In 1848 he established a school for young women at Philadelphia, hoping that it would exact less of him than the church he loved so well.

He found solace from his troubles

in working with his bees, and established a small apiary two miles from the city of Philadelphia. Here he studied their habits, and, as he had at first no books on bees, he had to observe with great care to be sure he made no mistakes. His early knowledge he acquired unaided, except for superficial information neighbor beekeepers could impart. Later he procured the books of Huber and Bevan. The immortal blind man whose teachings had illumined the path of so many students had now a new and ardent pupil.

Langstroth made several of Huber's leaf hives and some of Bevan's hives, in which the combs were suspended on movable bars. He, too, while studying beekeeping literature, found himself wrestling with the problem of making movable combs so that he might readily watch the activities of his bees and control them more completely. The cover of Bevan's hive rested on the comb bars, and the bees usually glued the combs together, making the hive hard

to open.

Langstroth lowered the bar supports so the hive cover did not touch the bars and the bees could not glue it to them. He had caught a new idea. The bees could not use their glue at the points separated by sufficient space. He had baffled the bees in their attempts to glue the cover down. Unknowing he had the principle in his hands which would transform beekeeping, he did not yet realize its ultimate result or know how to use it. The bars still fitted closely together and the bees attached their combs to the sides of the hives. He continued to work with his bees for several years, knowing he had made a forward step in bee management, but not satisfied with his achievement. If only he could in some manner obviate the necessity of cutting the combs loose before removing them from the hive, his improved hive would be a success.

Langstroth made continual discoveries of bee habits, which he published. Reverend Berg, of Philadelphia, enticed by his writings to pay him a visit in the summer of 1851, was impressed by Langstroth's knowledge of bees and by his hives. But Langstroth learned even more from this visit. Berg told him of the work of Dzierzon and of a bank cashier in York, Pennsylvania, named Samuel Wagner, who had made a complete translation in manuscript of Dzierzon's book. Berg promised to procure the book for Langstroth to read.

Langstroth was astounded to learn

that Dzierzon had made many of the same discoveries as he, and that he also was using a bar hive. The cure was attracting the attention of all Germany by his beekeeping. But Langstroth believed his own hive had features superior to those of Dzierzon, and he continually searched for a way of making the combs truly movable.

One late afternoon in October he was returning home from his apiary. Absorbed in his reflections, he did not see the houses by the way, or the occasional carriages he met, as he hurried home. It was a mood which occurred to him frequently. As his pace automatically drew him nearer home, he revolved in his mind the experiments in his little apiary, and his ever perplexing problem.

Suddenly he stopped in the middle of the street. He uttered a quick "Eureka," and elation broke over his face. Then, as suddenly as he had stopped, he resumed his pace, now scarcely able to restrain himself from running. His problem was solved. In a flash his ideas had disentangled and had taken a clear sequence; his hive now stood forth in all its details in the illumined chamber of his mind. The baffling obstruction in the way of its successful operation was removed. The combs, instead of being hung on bars, should be enclosed about by frames, the frames so hung that there would be a space all about between them and the hive walls except at the tips of the top bars. And the frames should be spaced apart from each other. With no points of contact, except at the tips of the top bars, the bees would have no place to apply their glue.

The Reverend E. D. Sanders, an old college chum, was visiting the Langstroth home. As soon as Langstroth reached home, he told Sanders of his revelation. Sanders had been watching with interest the experiments in the apiary that summer. Now the two men talked over the invention, drawing diagrams of frames, and predicting the influence the invention would have on beekeeping. Their enthusiasm knew no bounds, and only late in the night did the thought of retiring break

through their ardor.

Before Langstroth went to bed, he drew a diagram in his journal, and after the date October 30, 1851, he wrote, "If the slats are made so that a and b are about ¾ of an inch from the sides of the hive, the whole comb may be taken out without at all disturbing it by cutting . . . By the use of such a compound bar, the removal of bars with brood, comb, or honey can easily be effected. . . . The use of the bar will, I am persuaded, give a new impetus to the easy and profitable management of bees. . . . A command over the whole proceedings of the bees is

obtained which is truly wonderful." A prophecy was couched in these few pencilled lines. It was the dawn of a new industry. On January 6, 1852, he filed a claim for a patent on his movable frames.

Langstroth was soon corresponding with Samuel Wagner, the translator of Dzierzon's book, and found him an exact student, well versed in German literature. The two men instantly formed a friendship that lasted for a score of years, while together they blazed the path of the new beekeeping. When Wagner saw Langstroth's movable frames, he was convinced that they were superior to the Dzierzon bars. He had spent months in the translation of the Dzierzon book with the intention of publishing it, but now he decided to suppress it and to advise Langstroth to write a book describing his own system. Wagner thought such a book would be of more use to American beekeeping than the publication of the work of the great German. Few men can achieve an act of pure unselfishness, but Samuel Wagner was close to it when he forsook, for the sake of progress, the prestige he would have acquired as the translator of Dzierzon.

The next spring Langstroth gave up his school for young women, resolved to devote himself to his apiary and his invention, to acquire practical experience in its management before he should write his book. He threw himself into the work with the unchecked ardor of which he was capable: all his waking moments were for his bees and his hive. His close application broke his health, and before autumn he had so intense an attack of melancholia that he could no longer bring himself to think of his bees. Even the sight of the letter B nauseated him. He had to abandon the little apiary.

(To be continued)

How About Your Honey House?

Under "Fundamentals of Marketing," by R. J. Chadbourne, in August "Gleanings," page 504, the author hits at a sore spot when he brings up the question of cleanliness in production.

"When we think of a great many well-advertised foods, we unconsciously call to mind a clean factory or some scientific method of handling. Beekeepers as a class are common to almost all parts of the United States. We find them spread from coast to coast and from north to south. It is my opinion that the public cannot help but associate the producer with the product in the case of honey. Any slovenly beekeeper hurts indirectly all his brothers, because the public's opinion of honey

cannot help but be affected through their contact with him.

"Every producer who is a model of cleanliness and a follower of the more scientific methods, who is admired for his honorable dealings and his enthusiasm toward honey, is one of the finest advertisements for honey which you can find. In my opinion, this is something that every one should take to heart and impress on all producers.

"Even if we cannot induce a man to be as tidy and careful in the appearance of his place as he should be for the sake of doing right, we may be able to appeal to him on the basis of business necessity." ti ti

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Just so. Too often when leaving a honey house on a visit, even to some of our better beekeepers, there is a reservation in approval because of the untidy appearance of the honey house. Too much dirt on the floor, too much litter, occasional honied foot marks. We may excuse these things, but will the consumer? One of the best advertisements the average beekeeper can make is to have the place where he handles his honey as clean as he can possibly get it. "Sanitary" is a magic word. Let us apply it to our honey houses.

Cyprians and Yellow Caucasians Look Much Alike

Cyprians and the yellow Caucasians, both sometimes called copper-colored Italians, look so much alike that they can seldom be told apart by their disposition. I have found, however, that there is a marked difference in the quality of their stings. When mating Carniolan queens with Italian drones to get the so-called Carno-Italians, I can readily tell those that have been mismated with the Cyprians by allowing a worker to sting me between the fingers. While the sting of the Carno-Italian is mild and slow, and seldom swells, the sting of the Carniolan-Cyprian is hotter and swells quickly, more like the sting of a yellowjacket. By being hotter, I mean it seems to burn.

T. Gorsuch, Maryland.

Influence of Direction on Swarming

Bees that face east swarm much oftener than those facing south, even when managed the same and everything else equal. I do not know whether that is the case elsewhere or not, but have found it to be so here in Maryland, through several years of experience with hives faced both ways in the same apiary. I believe it is caused by the prompt invasion of the early morning sun.

Young Queens Prove Best by Actual Test

By E. W. Atkins

DOES an average increase of 38.2 pounds of honey per colony make it profitable to requeen each colony every year? During the sea-son of 1928 the writer had an opportunity to test the value of young queens in an apiary of thirty-five colonies of bees. Early in August of 1927 young Italian queens were introduced into ten average colonies of that apiary. Ten other average colonies were selected and marked, but not requeened. From then on each of the twenty colonies received as nearly as possible the same management and approximately the same amount of time was spent on each group. The ages of the queens in the group not requeened last fall were unknown, but we attempted to obtain colonies that had queens at least one year old at the time the selection was made; in other words, parent colonies which threw a swarm in 1927 were not selected, nor were colonies which we thought had superseded their queen during 1927.

The management of the twenty colonies was briefly as follows: Insufficient honey was gathered after the group of ten colonies was requeened to make it worth while to leave supers on, but each of the twenty colonies were given all the room their queens required for egglaying. The colonies had two tenframe hive bodies for this purpose, and a few of the strongest had three. At the time of the first frost all colonies were reduced to two hive bodies and the upper one was seen to contain not less than thirty pounds of honey, in addition to what was in the lower body. In both groups, and more particularly in the one with the young queens, it was found that some of the colonies were a little short of their quota of honey. In such cases combs of honey were taken from other colonies of the same group which had enough to spare. In no case was honey taken from one group of ten and given to colonies in the other group.

When all colonies had sufficient stores to take them through the winter and spring they were packed in two-colony cases. The colonies were then left undisturbed in their packing cases until fruit trees were in full bloom. Before unpacking, the entrances were watched a number of times on good flight days and all colonies were found to be alive, although three in the unrequeened group and one in the requeened group were weak.

At the time the colonies were unpacked, and as there was no American foulbrood in the apiary, a few of the colonies in both groups were given additional combs of honey. The

four weak colonies were also supplied with some capped brood. In each case, however, this brood was taken from colonies in the same group as the weak ones belonged. It was interesting to note that in the requeened group the weak colony which was given two combs of brood later produced ninety-eight pounds of surplus honey, whereas the colony from which it was taken produced ninety-five pounds. As this manipulation was made on only two colonies, it is not safe to conclude that the removing of the broad from one. which appeared at the time the brood was taken to be very much stronger than the other, was the actual cause of the stronger colony producing less honey than the weaker one. In the case of the unrequeened group, two of the colonies which were each given two combs of capped brood produced thirty-four and thirteen pounds of honey, respectively. One of the colonies from which this brood was taken produced ninety-eight pounds of

The following table gives the approximate quantity of light honey in pounds produced during 1928 from each of the colonies in the two groups:

oups:						
Colonies		Colonies not				
requeened		requeened				
147	lbs.	125	lbs.			
134	9.9	114	9.5			
121	2.5	98	2.2			
126	22	87	22			
113	2.2	74	22			
104	27	63	3.5			
98	2.7	63	2.7			
95	9.9	59	**			
93	7.7	34	**			
81	7.7	13	77			

Total 1112 lbs. Total 730 lbs. Average 111.2 lbs. Average 73 lbs.

honey and the other fifty-nine. The third colony of the unrequeened group, also given two frames of brood, produced seventy-four pounds of honey, whereas the colony from which it was taken produced sixtythree pounds. In the case of the two colonies first mentioned in the unrequeened group it is obvious that their reduced strength was due to poor queens, and the brood they received was practically wasted because the bees from it were of no value to the colonies in the production of a larger field force for the honey flow, due to poor queens. This is a common occurrence and makes futile the equalization of brood in all colonies except those that have prolific queens. Since the two colonies from which this brood was taken appeared to have fairly good queens, they may have produced a larger

crop of honey had the brood not been removed. The third colony to which brood was given had a little better queen and responded to the additional force of bees, but, on the other hand, the colony from which this brood was taken did not build up as strong as it might and its crop was possibly reduced due to losing the two frames of brood. As in the case of the requeened colony, this evidence is by no means conclusive as to whether a larger crop of honey can be produced by taking brood from the strongest colonies and giving to the weak ones.

Wisconsin.

Help Lew Mumford to Some Good Honey

The New Republic for August 15 prints a short discussion of good cooking and local food under the caption "Back to the Table." Lewis Mumford is the author, and if he writes what he thinks, he must be both a dyspeptic and a pessimist. After deploring his inability to buy good butter outside of the Jewish section of New York City, and bewailing the scarcity of fresh eggs, he writes a long appreciation of honey, and then says he cannot buy any. Read this sad story:

"The country where I live has lush upland pastures that are covered, from May to September with every variety of wild flower and as a result the honey produced here has a most delicate and subtle flavor, as if it were all compounded of the flower called baby's breath. Hymettus itself produces nothing finer than the fragrance of this local honey, but one must search far and wide before one finds a grocer that handles it in the region hereabouts. Instead of local honey, one is provided by the chain store with one of those anonymous brands which are obtained, I suppose, either directly or by the connivance of the bees, from glucose."

It is a pity indeed that such an appreciative lover of honey cannot find a way to delight his palate. And it is even more to be regretted that when he does take home a bottle from his grocer he labors under the impression that it is impure.

No wonder it doesn't taste good.

Perhaps a sample jar sent to him in care of The New Republic, 412 West Twenty-first street, New York, would sweeten his soul and convince him that real honey is not so hard to find as he pretends.

Inventor's Triumph

I eat my beans with honey,
I have done it all my life,
They do taste kind of funny,
But it keeps them on the knife.

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J. ALLEN, Catherine, Alabama

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THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

GETTING BEES TO USE HONEY

GETTING BEES TO USE HONEY

I write to know if you can tell me a means to force each individual hive to transfer to the brood nest honey—any honey, old, candied, dark, or unfinished sections? On account of the danger of foulbrood, I hate to set honey out in the open.

Just at present I have a large lot of unfinished sections. I usually brag about not having any unfinished sections putting on frames for increase in August. This year I put on a great lot of sections late, purposely, the idea being to make the bees strip them of honey and to use them first next June. They are clean. It does not rain here until November. I figure that the bees will jump on them in June like a bunch of Los Angeles real estate men on a trainload of Iowa tourists. I expect to wrap and store them mostly intact when the honey is cleaned out. How shall I do this without the bees becoming frantic enough to tear up the combs? They would surely do so if I wait until spring, when it would be candied. I have figured several ways:

1. Put super outside by the entrance and put screen about, except to leave a halfinch entrance for field workers.

2. Put on two empty full-depth supers and comb honey above.

3. Put comb honey on the bottom, then two empty supers, then bees journal for a pumber of versearch.

inch entrance.

I have been taking a bee journal for a number of years, and I do not think I have ever seen a lengthy article on the subject. Won't you write one, or have someone who is authority do so? Or cite old volume of American Bee Journal? Subject: "Forcing Bees to Transfer Honey to the Brood Chamber."

CALIFORNIA.

Answer.-Either of the methods that you mention is good, the last being the poorest, because it might induce robbing. The question is to place the honey so that the bees will feel that it is not in their control, or where they can use it in had weather. Rees put their honey above the brood, so that they may have it in their reach at all times. If it is on a different stand, but in easy reach of the hive, they will be most desirous of bringing it home. The only point is to fix it so that the colony for which the honey is intended will have access to it and will be able to keep other bees from it. This is easiest done by having the connection between their brood chamber and the honey as much as possible away from the entrance. Having it on the side or the rear, in this way, will not cause the brood chamber to be cooled, as it is sure to be, more or less, if it is above and removed from the brood chamber by one or two empty supers.

So I would say your first method is best, if you make the connection between the two at or near the rear of the hive.

POLLEN SUBSTITUTES

Is there any known substitute for pollen? I have had great difficulty in trying to winter bees in this locality and have arrived at the conclusion that it is due to a scarcity of pollen. I think this is one thing that the journals and bee books should lay more weight on, namely, that feeding sugar syrup is not a substitute for a honeyflow where there is a scarcity of pollen. I have repeatedly fed my bees in the fall, but they will not breed late in fall and then winter very badly on account of no young bees when winter comes. This spring when looking through the hives after another bad winter I could find scarcely a cell of pollen. At Black River Falls, about forty miles from here, where I kept bees for several years, I had no trouble at all in wintering them, but there were many swamps there, and there there were many swamps there, and th was always a fall flow and much pollen.

have thought if there were some substitute for the natural pollen, then perhaps it could be placed in the hives after the white clover flow, which is the last flow, and the bees would continue to breed while being fed. All beekeepers around here experience more or less difficulty in wintering, and I believe now that it is due to a lack of pollen.

WISCONSIN.

Answer .- I have always considered flour, whether of wheat, rye or barley, as suitable for bees to breed on. We fed hundreds of pounds during every late spring, when I was handling the bees myself, and, like Langstroth and A. I. Root, we thought we saw great help from it for the bees to breed. We never noticed any brood suffering. But half a dozen scientists now tell us that this food kills the brood. Is that correct? Then how did it happen that we did not see it? I am not quite convinced.

This food was nut in boxes on good flight days, outside of the hive, and packed with the hands so the bees would not drown it. It would be out of the question to put it in the hives. You might as well put water in the hives. We tried both and it did not The bees bring honey to mix with the flour as they pack it in their pollen baskets. Try it.

WINTERING QUEEN OVER COLONY

WINTERING QUEEN OVER COLONY
I should like to know whether it would be possible to winter a queen above a queen-right colony with an excluder between without giving the upper hive an entrance except through the excluder. I started this queen with honey and brood above wire, over a strong colony. Then I moved them to a stand of their own, but, owing to someone opening the entrance, they were nearly robbed out by the time I got home, so I moved them back over the colony again and later removed the screen and put an excluder between. Today I examined them; I see the queen is O. K. and is laying. It seems to be pretty late to move them and get that hive strong enough to winter, so I thought perhaps they might winter as they are. I use the Kootenay hive case to winter in. VANCOUVER ISLAND.

Answer.—This thing has been both a suc-

Answer.-This thing has been both a success and a failure, according to circumstances. If both the upper and the lower clusters are well supplied with bees and honey, I believe it will usually succeed. But if the queen in the upper section does not have sufficient stores and enough bees to care for her, there is a chance of her being lost. I would recommend that you try it, under the present circumstances.

PREPARING FOR WINTER

PREPARING FOR WINTER

1. I have a number of large colonies which occupied several supers during the latter part of the late honeyflow. Would it be wise to crowd these large colonies into an eight-frame hive body, or should I let them have a full-depth super in addition?

2. What is the proper time to put my colonies into winter quarters? We have a late honeyflow that lasts until it freezes in the autumn—about September 6. It does not generally freeze up much before the first of November.

3. What is the best method of feeding my bees in the fall to give them enough stores for winter? How much stores should a good swarm have to oring them through the spring brood rearing?

4. During the latter part of the fall honeyflow my bees gathered quite a bit of honey from the needles of the jack pine. This honey is very white and can hardly be distinguished from clover honey. In

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American Bee Journal

taste it is similar to goldenrod. Should this honey be left in the hive for winter feeding, or should it be taken out?

MINNESOTA.

Answers.-1. A very strong colony may he able to crowd into an eight-frame hive. But it has been quite generally recognized that an eight-frame hive is rather small for a colony of bees and some of the best beekeepers in eight-frame hives use what they call a "food chamber," with plenty of honey in it for the bees to use in winter and spring.

2. If by "putting the bees in winter quarters" you mean in the cellar, better do it at the beginning of cold weather in November. If you wish to pack them out-ofdoors, better do it during October, or even earlier.

3. If you cannot give your bees an upper story fairly full of honey you should feed them before cold weather with sugar syrup. one part of water and two of sugar. number of different feeders are sold. I like the can feeder inverted over the brood combs, the best. It requires probably some forty or fifty pounds to bring the bees through the spring brood rearing.

4. The source of that white honey does not look to me to be from jack pines or goldenrod. If it is white, it is probably good, but jack pine sweet, usually from aphides, would not be good winter food. However, I must say that I have no personal experience with it, only hearsay, which is not at all favorable to it.

DWINDLING IN FALL

I have sometimes hives overcrowded in the fall or the beginning of the winter. Would you advise dividing them into more hives? And would you kindly suggest the best method, as half of the divisions would be queenless? I will be grateful for any information on the subject.

CANADA. Answer.-I would not advise dividing colonies in the fall. The stronger a colony is, the better it will winter. I have had colonies, and could probably find some like them every winter, that were so strong that. even in the coldest weather, if one gave the least jar to the hive, some bees would immediately show themselves at the entrance, a very good evidence that the bees kept the hive warm enough for all their requirements. Such colonies may be divided early in the season, after winter, if one wishes increase. If no increase is wanted, give them plenty of supers at the opening of the crop and you will have a big harvest.

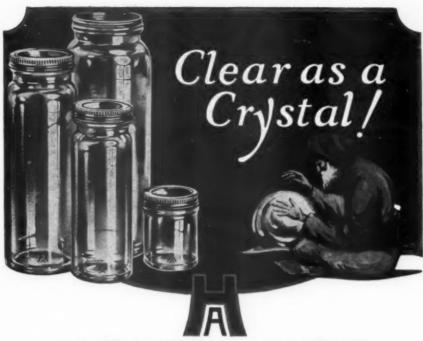
THIN HONEY

We have had a large crop of honey from sweet clover, the flow extending into August. About the first of August we had ome good rains, which revived the failing clover plants and brought pastures and lipped clover fields into bloom. As a reutly we were compelled to continue supering at the season when our flow is usually ever. These last supers were promptly filled and generally sealed, but I find the honey, on extracting, to be very thin and watery. I am pretty sure this honey would sour or ferment if extracted, or if left in the comb with the bees.

Please tell me if you know of any way to ripen this honey after extracting to make it salable. Honey is still with bees; fine color as early gathered crop. Have about one hundred full-depth supers of this kind. It has rained nearly every day for the past two weeks. Has this been the trouble? Information regarding the best way to handle this proposition will be greatly appreciated.

Answer.—Yes, it is the wet weather which

Answer .- Yes, it is the wet weather which has caused the nectar to be extra thin, and of course, if the bees gathered it very fast, it is bound to be more or less unripe. Some people imagine that honey is always ripe



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Use Alcohol—Formalin to be safe Ask your dealer or write to

J. C. HUTZELMAN, Glendale, Ohio

when the bees seal it, but I have often seen honey work in the cells and burst the cappings, although it is unusual.

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If the only honey unripe was the unsealed honey, it would probably ripen by leaving it a few weeks longer on the hives. But if, as I surmise, even the sealed honey is unripe, it will be best to extract it all and place it in a very warm and dry room. You may have to heat it later, if it does not evaporate some of its water. But do not heat it beyond 140 to 145 degrees, so that it may not lose its essential oils. Keeping it hot a long time will cause it to evaporate most of its extra moisture and, although such honey is not as good as that fully evaporated by the bees, it will be salable.

TO DISTINGUISH SACBROOD

There is something the matter with my bees. By reading the Bee Journal and by looking at pictures, I think it must be European foulbrood. Cells sink and brood dies; is not ropy, but sometimes strings a little; is not dark brown, but very light brown. I sent a piece of it to U. W. at Madison, Wisconsin. They wrote and said it was "sacbrood" and that by feeding and building up I could overcome it. I have done this; my colonies are very strong now, and still I find some of it. What I want to know is, whether sacbrood and European foulbrood are the same, and what really is the best thing to do for it? Last summer I did not have enough frames, and so a friend of mine gave me some frames to use, and these frames were affected; I know it now, although he told me he had his bees inspected and they were all right, and I, being a "greenhorn," believed everything was all right.

Answer.—The reply given to you by the

Answer .- The reply given to you by the University of Wisconsin people is right. But it may be that you have some American foulbrood mixed with the sacbrood. Sometimes it is difficult to diagnose.

Sacbrood and European foulbrood are two different diseases. In European foulbrood the cells are rarely sealed, for the disease attacks the larva while it is still young.

If there is but little of this dead brood in the hives, you might leave them in this condition till spring. Then, if they don't clean it, it may be best to take out the combs containing this trouble and melt them up. But I believe that it would be well for you to send a little of this remaining dead brood to the Bureau of Entomology at Washington, D. C., to the name of Mr. James I. Hambleton, apiarist in charge. They are always quite willing to do all they can for the public. Then, if they say it is only sacbrood, you need not worry, but just take good care of your bees and see that they have plenty for winter.

MOTHS IN COMB HONEY

MOTHS IN COMB HONEY

I have one hundred cases of honey that were shipped to me from my home in Iowa; was cased up about the first of August. The moths have got to this honey. I don't think it is very bad, but I notice some of the larvæ are just beginning to hatch. Never having it in my comb honey before, and my bee books and nearly all of my Journals being back home, I am at a loss to know what to do in order to save it. I have a little house here that is 5' x 5' x 2' 5". By placing the sections on top of each other, would that let the odor down enough? This place can be made tight by lining it with newspapers or heavy building paper all around and overhead. How much stuff and what kind of stuff would I need? And how long to leave it under fumigation? And how often this fall in order to save it?

PENNSYLVANIA.

Answers.—Buy carbon bisulphide. About

Answers .- Buy carbon bisulphide. About ten ounces of it will do to fumigate that little room once, if the room is very tightly closed so that the fumes cannot escape. You must use it twice, about two weeks apart, in case that some of the eggs of the moth have not yet hatched. Have your cases

American Bee Journal

open so the gas pervades them well. Pour it into some flat dish, so that it may evaporate easily, and place it at the top of the pile, as the gas is heavy and floats downwards. Do not use any light or any cigar while handling it, as it would catch fire and explode. It is not dangerous if you don't use fire near it. Leave your boxes exposed to the fumes for at least twenty-four hours.

You may use brimstone, such as they use to disinfect rooms where people have been sick of contagious disease, but this must be burned in the room and the cases placed high enough above the burning brimstone so the heat won't affect the honey. Brimstone is very cheap and you can burn a pound or more in a room, so it will kill not only the moths but also the flies. But remember that your cases must be opened so that the gas will reach the moths.

PACKING FOR WINTER

1. For a strong ten-frame colony, what is the proper winter entrance, in inches—that is, for outdoor wintering in this lo-

2. When packing hives in clover chaff for winter, would it be advisable to remove telescope cover and substitute with canvas to allow chaff above to absorb more moisture? Would a thick felt quilt under the cover be sufficient absorbent?

3. Do you think the Minnesota bottom feeder would give enough extra air space in the hive to allow contracting of entrance? Or would the use of this feeder tend to lessen the moisture by providing more room?

Answers A strong colony should have

Answers .-- A strong colony should have an entrance about half the width of the hive, in winter, if it is located where the wind will not blow directly into it.

2. The chaff should be as near as possible to the frames occupied by the bees, with either a gunny cloth or a cushion between it and the cluster. The telescope cover may go over the top of it. Some people use old woolen rugs or carpets, folded, in place of chaff.

3. I don't recommend the use of a bottom feeder, because there is always more or less chance with it of attracting robbers, the latter being always wider awake than the bees of a weak colony, and it is usually the weak colony that requires feeding. Thus the robbers sometimes get to the feed before the bees of the hive do. Not so when you give the feed above the brood combs, which is the proper place to feed.

THE LARGE HIVE IN MEXICO

THE LARGE HIVE IN MEXICO

Having some difficulty in selecting our
hives, owing to the small knowledge we
have in beekeeping, we would like to have
you to tell us which is the best hive to use
in a locality where great coffee and banana
plantations, all kinds of wild and cultivated
flowers, offer in turn perpetual food for the
industrious bee.

Would you think that a twelve-frame
"Dadant" in which the top bar of frames
measures 20 ½ x ½ x 1 ½ is too large or too
square? Can these hives be piled up on
top of each other as other hives for the
honeyflow?

Answer.—Yes, the hive which you de-

Answer .- Yes, the hive which you describe is the one we use, following in the footsteps of Langstroth and Quinby. We thought the Quinby style of hive was a little better than that of Langstroth, whom he followed in his methods.

We are not acquainted with your locality. but there was a very practical beekeeper in your town who is now in the U.S., Mr. Provansal. He used those large hives.

We do not use two full stories on top of one another. We find half stories better for the surplus honey. If you wish to use two full stories, you had better adopt the regular Langstroth hive system, either eight- or ten-frame.

INSECTS IN COMB HONEY

When I take my supers off, there are hundreds of little white and brown bugs of some kind under the sections. They are about the size of chiggers, about one-third the size of ants. I always thought that the size of ants. I always thought that beemoths were worms when first hatched out. What is the difference between bee-moths and waxmoths? I am using carbon bisulphide to fumigate my comb honey with. Will this kill these little insects?

KANSAS.

Answer .- I don't know the little white and brown bugs which you mention. I don't believe that I ever saw any. As to the waxmoth, or beemoth, the eggs of it are laid by a moth, but it is the little white worm which gets into the comb honey and eats up the wax, while it is growing from the just hatched worm to full size, or about an inch in length. As soon as hatched, it webs a sort of silk gallery with which it tries to defend itself against the bees. When full grown it webs a cocoon and changes in it from a worm to a chrysalis and then to a full moth. You will find the waxworm described in every textbook on bees.

Your use of carbon bisulphide to fumigate the combs is all right.

UNUSUAL WORKERS

I wonder if I have a freak hive of bees or if such are common in every apiary. I have thirty stands and my number fifteen works rain or shine. I saw them coming and going during a hard rain and I supposed something was the matter, but upon examination, I found everything as it should be, and this hive will produce more surplus honey than any hive I have. I have watched it many times during the recent rains—and honey than any hive I have. I have watched it many times during the recent rains—and it has rained here every day for about a month—and when every other hive is idle, this No. 15 keeps right at it, the same as if the sun was shining. And, to show that they are going to produce more than their share, I will say that I have four full-sized, ten-frame supers on the hive at this time, and the last one is nearly full. Is there any explanation to this, or do bees—that is, some bees—always work during the rains?

KENTUCKY.

Answer.-There is always an element of doubt in replying to a question like yours, but my explanation would be that this No. 15 has been robbing some colonies in another apiary, or in the woods. I cannot see how it could be explained in any other way, as there is usually no honey in the fields during a rain.

HOW TO USE BEE ESCAPE

1. What age bees are now in top supers? I those top supers are stacked above a honey board in a weak colony, will the bees go down and winter with the weak colony and stay with them? Or will they return to their home and bring back a band of robbers to clean out the weak colony?

2. What is the custom in general as to the use of the honey board and bee escape?

NEBRASKA. What age bees are now in top supers?

Answers .-- 1. There may be bees of all ages in a super, but if you remove it from its own hive in the busy part of the day, there will probably be only young bees in it at that time. Otherwise, if your weak colony is very weak, there may be an opportunity for the robbing that you suggest.

2. This question is not very clear. put a bee escape in a honey board and put it on top of the brood chamber the day before removing the honey. There are but very few bees left in the super the next day.

MOVING TO WINTER

I am an operator of one hundred and fifty hives of bees. I have them all in two-story hives. I have them about twenty miles away from my own yard and would like to know when it would be best to get them back to my own place for wintering.

PENNSYLVANIA.

Answer .- If you must move your bees before winter, I would recommend some

cool day in October, when the bees are quiet. If the colonies are very strong, it may be necessary to remove the cover and nail a frame covered with wire netting over the brood combs. Of course it is advisable to take away all the surplus honey before moving them.

As a rule, we prefer moving bees after winter, as they are much lighter in stores, but this is simply a little more desirable, for bees may be moved at any time, if the proper precautions are taken.

Pre-Volstead Treatment for Stings

With great interest I have read your article on the bad effect of bee stings (August issue, page 417). My daughter suffers in the same manner. Her own doctor simply advised a dose of Scotch whisky or "Sal volatile," but, talking to another, he suggested a culture for injection in the same maner as snake bite or asthma is modified today.

It would be interesting to learn if anyone so affected has ever been so treated.

There would be little use of my getting rid of my bees, as my garden is full of wasps as well as neighbors' bees and innumerable other insects of a stinging and biting description.

I know of several others who suffer in a similar fashion, though such cases are rare.

Her oldest brother and I are hardly affected at all.

Thomas Tait, London.

A New Song

Out in the Unitah Basin in Utah, they have some beekeepers who are beekeepers. Some days ago when your reporter was in that center of production of white honey, Mr. W. H. Paul called attention to the fact that even the meadowlarks had added a new song to their repertory since the coming of the beemen into that territory, and asked us to listen to one, nearby, that was warbling away, and this is what we heard, over and over: "He takes—the Bee Journal—He takes—the Bee Journal."

Reporter.

American Honey Institute

(Continued from page 498) pally of tartaric acid as a base and artificially colored with coal tar

Powders labeled with names containing the words lime, lemon and orange contained none of these fruits, but were made up principally of a tartaric acid base to which was added oil of lime, oil of lemon, and oil of orange, derived from the peel of those fruits, and they were artificially colored with coal tar colors.

BEEWARE **EXTRACTORS**

American Cans and Pails, Glass Honey Jars, Wired Foundation Catalog for the asking

If you wish prompt service, write

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THREE-BANDED QUEENS **Balance of Season**

Untested .70c each, \$8.00 per doz., \$70 per 100 Select ntested \$1.00 each, \$11 per doz., \$80 per 100 Tested Queens \$1.25 each.

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will extract your honey on the cool days when the bees are not flying; so that it is not so necessary to have a bee-tight extracting house.

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PACKAGE BEES FOR 1929

Pure three-banded Italians with select young laying queens

You cannot buy better bees or service

Let us quote you prices

W. D. ACHORD

Fitzpatrick, Ala.

Meetings and Events

Current association meetings and organization notices are published in this department each month. Secretaries and other officers of organizations who wish publicity here should make sure that notices are sent in before the fifteenth of the month preceding publication. Frequently notices are received too late for use and consequently do not appear at all.

The Missouri State Fair

The fair is over for 1928 and it will soon come around again in 1929. The bee men made a wonderful showing in the Apiary Department. The beautiful displays of "the finest honey in the land" and bees certainly was truly a fine advertisement for our own industry. Great numbers of people remarked how good the honey looked and how they wished for some. Many said they did not know honey could be put up in so many different forms. No doubt the exhibits at the fair were responsible for many honey sales, and the results of each fair will last through many years.

We were given about 35 to 45 per cent more space this year and the exhibitors "did their stuff." Every inch was full of quality exhibits and the competition was keen in most all classes.

We were disappointed, however, in the fact that there was not a single entry in the boys and girls classes, and there was not a single honey entry in the 4-H Club division in the University Building. This class will undoubtedly be removed until there is more demand for it.

The ten high men:

Carl Neef, Boonville, \$94.00. F. S. Butterwick, Sedalia, \$51.00. William Sass, Concordia, \$40.00. W. A. Scott, La Monte, \$38.00.

M. O. Stevens, Sedalia, \$36.00. F. E. Scotten, Bolivar, \$35.75. H. E. Bartz, Keytesville, \$16.00.

Ollie C. Kerbey, Sedalia, \$14,50. P. J. Crabb, Liberal, \$14.00.

Fred Drury, Unionville, \$9.75. The bee men are to be congratulated for making such a splendid showing. Some of the old exhibitors went so far as to say that this was the largest and best show we have

The new class, entitled, "Best display of apiary products, including was popular and interesting and a decided asset to the show. The catalogue called for 200 to 300 pounds of honey and the exhibitors went to the maximum limit. ever, it has been suggested that the maximum amount be reduced next year. A number of bee men who have not exhibited heretofore vowed that they would be on hand next year with a number of entries.

There is some talk of allowing the exhibitors the privilege of bringing extra honey to the Apiary Department and selling it during the fair. This would no doubt be a fine thing

for the industry by making a lot of new honey customers.

Candied honey was very much in evidence this year, and it was surprising to hear the large number of folks say they liked honey that way. Candied honey seems to be winning favor, and that is fine for the bee-

Dr. L. Haseman, of the University, judged again, and as usual he was careful and studied and weighed each point with technical skill and experi-

The following are some of the suggestions turned in to the State Fair secretary. Let's have yours also:

1. Provide more room for at least two additional classes that have been asked for.

2. Provide more money for pre-

3. Have the judging on Saturday, the first day of the fair, instead of Monday, for the benefit of the bees and queens, and so the exhibits can have placards on them naming the

owner, etc., before the crowds start.
4. Limit the amount of honey in the extracted display to 75 to 100

pounds.

5. Advertise that the exhibitors can bring a reasonable amount of extra honey to sell at the apiary booth or stand, if they wish.

6. State in premium list that entries sent in may be sold if the exhibitor wishes.

7. More light bulbs over the apiary exhibits.

8. Nice, uniform placards placed on individual exhibits, immediately after judging, giving name and address of exhibitor and name of class.

9. Large, attractive signs around exhibits advertising the fine qualities of honey.

10. See that an ample supply of honey booklets giving honey recipes are on the counters at all times for "passersby," so as to stimulate the use of honey. (I distributed a thousand, but should have had many times that number - Kellogg book-

11. Emphasize the rule that all exhibits must be in place by 6 p. m. Friday so as to give all exhibitors the same and equal opportunity. Local men have been overriding this rule to some extent.

12. Have daily programs and demonstrations by the State Apiarist.

13. Shallow frames of honey and full-depth frames of honey must be in either glass or celluloid cases.

14. Dr. Haseman requests the rule

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American Bee Journal

that all entries must qualify for the class in which they are entered, or be barred from receiving premiums. For instance, queens entered in the golden class must be golden, and a brood comb must have been used for brood rearing or else be barred from receiving premiums.

Missouri Association Meeting

In the absence of President King, the meeting was called to order by the secretary in the Missouri Ruralist "Howdy" tent at the State Fair at 10 o'clock. All the main sections of the state were represented, except the extreme south, in spite of the downpour of rain. The meeting was a live one and continued till 1 o'clock.

George Jordan, of the Missouri Ruralist, gave a short talk and complimented us on being so active and so interested in our work. He pledged the hearty cooperation of the Ruralist for our best interests.

One of the finest parts of the meeting was a splendid and encouraging talk by John Case, editor of the Ruralist and president of the State Board of Agriculture. In a meeting of the board that morning, before the bee meeting, the board made some very favorable remarks about the bee industry and the bee law, and commended Mr. Allen for the good work which he has done, and empowered him and encouraged him to "go ahead" and enforce the Then, in the association meeting, Mr. Case said he would do all he could to get us more money for premiums for our department in the State Fair and also help us get a separate, permanent apiary building for our own products. Mr. Case is evidently intensely interested in our welfare.

William Brengarth of Slater and Leo Bradford of Liberty gave an interesting and profitable account of their Ford trip to the West. They were accompanied by N. R. White, of Napton. They visited the large, efficient and labor-saving commercial plant of W. A. Jenkins at Rockport, Missouri, the A. I. Root factory at Council Bluffs, and visited with Professor Eckhart in Laramie, Wyoming. In Wyoming it has been proven by accurate and reliable tests that bees stored thirty-seven pounds of honey in twenty-one days, flying six miles after the nectar, and they made twenty pounds flying eight miles after the nectar. There is considerable doubt as to whether they could do that in Missouri.

The boys went from Laramie to Fort Collins, Colorado, and visited Professor Richmond. He says they are getting more benefit from our law than we are ourselves, because the beekeepers demand inspection so as to ship honey into Missouri.

The Rauchfuss home apiary and plant at Englewood, near Denver,

was intensely interesting. Mr. Rauchfuss is probably the most noted beekeeper in America. He has patented 125 labor-saving devices that are very handy in his bee and honey work. He has an automatic scale that weighs honey before it gets into the bottle or pail, with which he had filled thirty-six ten-pound pails in a minute. He also has a fine honey melter which does not darken the honey or injure it in any way. It saves him the trouble of extracting honey, as he melts all of his combs. It was agreed that melting the combs every year would not be practical in Missouri, as our bees do not build sufficient comb.

The boys are very much enthused over the Caucasian bees. They went into a large yard with hives close together, looked through two or three brood nests without veil or smoke and did not get stung. They are resistant to disease, very prolific, and good honey gatherers. Their undesirable qualities are that they are black and it is hard to find the queen, and they build too much burrcomb, even in a 3%-inch space.

At Manhattan, Kansas, they found the Apiary Department experimenting on pollen substitutes. The Colorado station is experimenting on a race of bees that quit laying early in the fall and start later in the spring.

The Rauchfuss bees are wintered with a shallow super above and one below a regular ten-frame body. Mr. Rauchfuss and daughter care for five thousand colonies, but do a great deal of the work with machinery.

Attention was called to the Horticultural Show to be held in Columbia October 16 to 22, in which there are a number of honey classes with bee supplies offered as prizes.

The association will probably meet in Columbia during Farmers Week for its regular annual business meeting and election of officers. Watch for further announcements. The reels of bee pictures did not arrive for the meeting at the State Fair, but they are already promised for Farmers Week.

Clay T. Davis, Secretary, Cameron, Mo.

Gainesville, Fla., Meeting a Success

The beekeepers had a very enjoyable time at Gainesville during "Farmers and Fruit Growers Week," August 13-18. The beekeeping section opened Tuesday morning with an address of welcome by Wilmon Newell, dean of the Agricultural College. This was followed by a talk on "How to Start Beekeeping," by R. E. Foster, Apiary Inspector. The rest of Tuesday morning was taken up by a question box, the beekeepers being given a chance to ask questions. The first subject Tuesday afternoon was "How to Super to Get

Maximum Crop." J. B. Nordman, Deland, and J. J. Wilder, Waycross, handled this subject very nicely. The next subject, "Dequeening and Requeening," by J. W. Sherman, Valdosta, drew a great deal of attention. Mr. Sherman is a good speaker and gave the beekeeper very good inforby J. W. Barney, of Brandenton, Florida, speaking on "Association Queens." Mr. Barney of the Florida State Beekeepers' Association and we all like to hear him talk on any subject. The suggestion he brought to the beekeepers was that they might have queens raised by certain breeders and guaranteed by the association.

Wednesday morning there was a talk on "Bee Diseases" by R. E. Foster, followed by a talk on "Swarm Control" by J. J. Wilder. Following his address, Mr. Wilder conducted a question box.

Wednesday afternoon everyone went to Hampton Beach for a picnic. There were about one thousand there and everyone seemed to have a good time.

Thursday and Friday of "Farmers Week" were given to the Florida State Beekeepers' Association for its annual meeting. Thursday morning was taken up by the president's address, the election of officers, etc. The officers holding office were all continued with the exception of the vice-president, who had resigned. W. C. Williams, Eustis, Florida, was elected vice-president. Thursday afternoon R. E. Foster gave a talk on "Standardization of Florida Honey."

W. J. Nolan, from the Bee Culture Department at Washington, D. C., gave an outline of the work which will be taken up by the new bee culture field station which has been established at Baton Rouge, Louisiana. Mr. Nolan is temporarily in charge of this station.

Friday morning J. W. Barney gave an address on "Cooperative Warehousing and Marketing of Florida Honey" and gave an outline of the plan of an organization for this purpose. The Florida State Beekeepers' Association instructed its Board of Managers to perfect such an organization. The beekeepers present signed pledges to sell their honey through this organization. Friday afternoon Mr. Nolan gave a short talk on "Queen Breeding and Controlled Mating." The beekeepers were intensely interested in this subject and asked Mr. Nolan a great number of questions. This was followed by a round table discussion.

Manitoba Beekeepers' Association

A meeting of the directors of the Manitoba Beekeepers' Association was held in the Royal Alexander Hotel on Thursday, August 29, to con-

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GET RUNNING'S QUEENS AND GET HONEY

THEY SATISFY!

The kind we use in our extensive Michigan Apiaries, where we produced 92 TONS of honey last season.

Choice Untested Italian Queens
75c each
Tested, 50c each extra

Write for prices in large quantities. All queens sent from Sumterville, Ala. Address for QUICK service,

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Sumterville, Alabama



Beekeepers in many lands have been pleased with this most important tool in Beekeeping. Your Bingham Smoker is offered for sale by numerous dealers.

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When you are in the market for anything in Tin Cans or Pails, ask for our interesting prices, giving quantity wanted.

Insist on the Best

A. G. WOODMAN CO. Grand Rapids, Mich.

THRIFTY QUEENS

50c each

To November 1st

Every THRIFTY Queen is guaranteed to please.

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Choose Labels Wisely

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They sell honey and are priced right. Send for complete catalog

AMERICAN BEE JOURNAL HAMILTON, ILL.

sider a suggestion for a price on the 1928 honey crop.

The following resolution was adopted:

"That the object of this suggestion is to base the price of honey to the consumer at a minimum price of 15 cents a pound, which in the opinion of this committee is a low price.

"Where a higher price is satisfactory to the consumer, by all means it should be obtained. This will mean that the wholesale price would be 11½ cents for 10's, 12½ cents for 5's, 13½ cents for 2½'s, in single or ten-case lots.

"Where a wholesale market cannot be secured, grocery brokers who assemble carload lots for distribution should be given a price of 10 cents a pound for 10's, 11 cents for 5's, and 12 cents for 2½'s, less their commission.

"The proper method of disposing of a crop is to submit a sample of the honey to the proposed purchaser and guarantee that every can in the shipment will be according to the sample.

"Honey must be properly strained, and the name and address of the producer on every can. This is important, for by keeping Manitoba honey on a high level as to quality and purity we believe that the future will assure us a premium on our honey."

The following brokers in Winnipeg have taken an interest in the marketing of Manitoba honey and are in a strong financial position:

Donald H. Bain, Ltd., 115 Bannatyne Avenue.

Tees & Persse, Ltd., 315 William Avenue.

L. T. Floyd, Secretary.

The Mid-West Show

We want to remind our readers that the Mid-West Horticultural Show is to be held at Cedar Rapids, Iowa, next month. Competition in the bee and honey department is open to the world and an effort is being made to make a competition of really national scope.

It is hoped that at this year's show there will be more interest manifested by beekeepers from a distance. Fruit growers, florists and vegetable growers come together to exhibit from widely separated localities. The show should be of equal interest to the honey producers. Premium lists and details concerning the exhibition can be secured from Prof. F. B. Paddock, Ames, Iowa, who is superintendent of the Apiary Department, or from R. S. Herrick, State House, Des Moines, Iowa, who is secretary of the show.

Awards at Illinois State Fair

Report from the officers of the Illinois State Fair is to the effect that \$578.00 was distributed in pre-

miums at the bee and honey exhibit. The principal exhibitors who carried away prizes during the fair are as follows: Isabella Coppin, Wenon; Elmer Kommer, Woodhull; Edward S. Kobold, Peru; J. H. Bearden, Taylorville; Frank bishop, Taylorville; W. H. Snyder, Decatur; Gypsy Queen Farm, Pawnee; James A. Stone & Son, Farmingdale.

Great interest was manifested on the part of the public and of beekeepers in the different exhibits there, perhaps partly due to the satisfactory honey crop in Illinois during the past two years and partly to the activity in publicity for honey.

Bee Men Organize

Bee men of the North Platte Valley in the vicinity of Scotts Bluff, Nebraska, have formed a cooperative marketing association for the handling of their honey. H. W. Sickles, of Morrill, Nebraska, is president; George H. Scharman, North Platte, vice-president, and William F. Prohs, Gering, Nebraska, treasurer.

It is announced that by handling the honey in this manner it will reduce the marketing costs, bring better prices and give the purchasers much more to choose from.

J. B. Dillon.

Muskingum Valley Beekeepers' Meeting

The field meeting of the Muskingum Valley, Ohio, beekeepers was held August 23. About forty were present.

This association is one of the flourishing ones of Ohio, representing the counties of Muskingum, Licking, Perry, Washington, Athens and Hamilton. Speakers in attendance at the meeting were Fred W. Muth, Cincinnati, and F. M. Russell, Roxbury, Ohio. The next meeting is to be held in March, 1929.

Uintah Basin Bees Score Well

The honey crop in the Uintah Basin looks very good this year, according to reports. Last year the estimated returns from honey was nearly a quarter of a million dollars. The Uintah Basin has long been known for its high quality of honey. Carloads of it are shipped annually. More than half the bees of Utah are found in this basin. The outlook is bright.

G. P.

Golden Italians, Poor Winterers

Golden Italians cannot stand the winters in the climate of Maryland without a great deal of protection, while other bees are wintered out of doors without protection.

T. Gorsuch, Maryland.
(This is another instance against goldens, for the real Italian bee stands winters as well as the common bee.—Editor.)

Crop and Market Report

Compiled by M. G. Dadant

For our October crop and market report, we asked reporters to answer the following questions:

1. Total crop compared to 1927? Is sale of honey satisfactory?

3. Should prices hold to last year's basis or advance?

THE TOTAL CROP

Roughly speaking, we might say that outside the intermountain territory and the Southeast, the total crop this year has been far less than it was a year ago.

Taking this up in detail, we find that Connecticut is the only one of the New England states which reports anywhere near a normal crop, all the balance reporting

25 to 70 per cent of last year.

In New York the crop has been about 35 to 50 per cent of last year, except that in central New York the crop has been at least the equal of 1927. Pennsylvania has had less than last year, and New Jersey will not have over 85 or 90 per cent of the 1927 crop. The Virginias will be about normal, with perhaps a little better than a normal crop in the Carolinas. Georgia reports in the neighborhood of 150 per cent of last year, and Florida

over 200 per cent of last year.

Alabama and Mississippi had a very short crop in 1927, and although they have not a heavy crop this year, it will rank considerably more than a year ago. Tennessee and

Kentucky are about up to last year's production.

In Arkansas and Louisiana the crop is going to be much better than in 1927, running as high as 150 per cent of last year in Louisiana. In Texas it is hardly possible that as much honey will be harvested as in 1927. The cotton areas report about 80 per cent of the usual crop, while some of the other sections run from 25 to 75 per cent of 1927, a few, however, reporting little excess of the 1927 crop.

In New Mexico there has not been half of last year's production, and in Arizona perhaps 75 per cent.

The Ohio and Indiana and Illinois crop will not run much over 30 per cent of last year, and in many instances much less than this. In eastern Iowa conditions are the

Michigan seems to be the only central western state that can report anywhere near a normal crop. northern sections of the southern peninsula and the northern peninsula will have as much as last year, but the south and east parts of the state undoubtedly will rank considerably less.

Every report coming in from Wisconsin is that there will be in the neighborhood of 25 per cent of the 1927 production. Minnesota has fared better and will have production. Minnesota has fared better and will have from 50 to 80 per cent of last year, with a number of reports in the western half of the state getting at least the equal of 1927. North Dakota will fare even better than last year and South Dakota reports 200 per cent of 1927 production. Nebraska will be at least equal to last year, and the sweet clover sections of Kansas report 150 per cent of last year. Western Iowa, which is also in the sweet clover belt, is above normal. In Oklahoma there will not be 75 per cent of the 1927

production.

Colorado is one state which has very spotted reports, but which we believe will not rank any better production the state over than it did a year ago. Some of the eastern areas are reporting far better production than a year ago, while a few of them are much under. On the western slope the crop will hardly be equal to 1927. Utah will undoubtedly have a little more honey than it had last year. Wyoming was a near failure in 1927, and is

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having an average crop this year, so they will have much more honey for sale than a year ago. Nevada is just about the equal of last year.

Montana and Idaho are undoubtedly banner states of the intermountain group this year, as one of them reports from 150 to 300 per cent more honey than last year and last reports were that the bumper crop was

Oregon is just about normal, with Washington probably 10 per cent under normal.

Unfortunately, California, which has not had a banner crop in several years, has even less than in 1927, and 1927 was a partial failure. A few isolated localities are having as much honey as a year ago, and this includes the northern star thistle sections. In the usual big honey production belt, however, many beekeepers are having to feed, and very few are getting much in the line of

The western provinces of Canada report just a little better crop than in 1927. Ontario and Quebec seem to be about normal.

SALES OF HONEY

Most reports are that honey sales are good. They seem to be good at least in a retail way, and this applies especially to the eastern and central western sections. The time has hardly come for reports of good sales in a jobbing way from the western centers of production.

The Southeast with its bumper crop is complaining of the sales and demand. Undoubtedly a large flush of the sales and demand. Undoubtedly a large flush of honey down there is going to have the effect of having to seek perhaps an outside market, whereas in the past few years they have had sale for all of their honey at

In the Central West, reports are conflicting as to whether honey is moving good or slowly, and we believe that the movement is going to increase rapidly as the cool weather comes on. Most reports are of good demand and a fair volume of sales. The same is true of the plateau regions.

In the intermountain territory the sales are from fair to good. In Texas, sales are strong and this is also the case in California and in Canada.

A very conflicting proposition arises as to question of price advancement. Practically all reporters are of the opinion that the prices should remain approximately on a stationary point with 1927. A number report that advances should be made, and several, including some reporters in Minnesota, have made already such an advance. Undoubtedly the eastern and central western sections could stiffen prices of honey if it were not for the possibility of influx of the heavy crop from the out-

The Southeast has already experienced a considerable drop in prices of honey, and the retail and other prices of honey in Texas have also slumped somewhat from last

As concerns the wholesale and jobbing prices of honey in the plateau and intermountain territory, these are starting out at approximately the same price as last year. We have reports of good, white honey selling as low as 6½ cents per pound, another report of carloads moving

at 7½ cents per pound and a number of reports between. We understand one big association is offering their honey at 7 cents for best, white, extracted honey, f. o. b. shipping point.

Undoubtedly prices are going to stabilize at about this figure, with perhaps a slight stiffening as time goes on. We cannot for the life of us see where there is any

reason for the price of fine, white honey dropping under the figures of last year, when it is considered that the production in 1928 the country over must be considerably under that of a year ago.

Even the central western sections, which have had only 25 per cent of a crop this year, are complaining that the honey is of inferior grade, being a mixture and nothing like the white clover honey of last year's pro-

We cannot help but be optimistic over the possibilities for honey sales during the coming year. It appears to us that the demand already is far in excess of what it was a year ago and there is not nearly the tendency on the part of beekeepers to want to throw their honey on the market before the bulk of the crop is ready. This is especially noticeable in the central western sections this year, which do not have such a large crop to dispose of and are "sitting easy" as to the disposal of what they

less than 43c. Count each initial or number as one word.
Copy for this department must reach us not later than the fifteenth of each month preceding date of issue. If intended for classified department, it should be so stated when advertisement is sent.

when advertisement is sent.
As a measure of protection to our readers,
we require references of all new advertisers.
To save time, please send the name of your
bank and other references with your copy.
Advertisements of used beekeeping equipment or of bees on combs must be accompanied by a guarantee that the material is
free from disease or be accompanied either
by a certificate of inspection from an authorized inspector or agreement made to
furnish such certificate at the time of sale.

BEES AND QUEENS

HOLLOPETER'S Italian queens, by return mail: Untested, each, \$1.00; twelve, \$9.00. In uniting nuclei we find many fine young tested prospective breeding queens, each \$2.00. We supply package bees by parcel post. J. B. Hollopeter, Rockton, Pa.

BRIGHT three-banded Italian queens, package bees, finest quality. Write for 1929 prices. Taylor Apiaries, Luverne, Ala.

CLOSING OUT FOR THE SEASON—Now is the time to requeen with the best queens at bargain prices. To dispose of the queens we have quickly and close our business for this season we are offering them while they last at the following low prices: One untested, 60c; 12 or more, 50c each. Tested, \$1.00 each. Safe arrival and satisfaction guaranteed. Health certificate with each shipment. J. M Cutts & Sons, R. No. 1, Montgomery, Ala.

WINTER QUEENS—Good tested three-band \$1.00 each. I send queens anywhere any \$1.00 each. I send ques.... month of the year. D. W. Howell Shellman, Ga.

PACKAGE BEES—Special offer for 1929.
Price list free, Hurry. The Crowville
Apiaries, J. J. Scott, Prop., Crowville, La.

IF you want bees that are gentle to handle, good honey gatherers and beautiful to look at, my strain of go'den Italians will please you. Prices: Untested, \$1.00; 6, \$5.25; 12 to 49, 75c each; 50 or more, 70c each. Health certificate, safe arrival and satisfaction.

Hazel V. Bonkemeyer, R. 2, Randleman, N. C.

I.EATHER COLORED ITALIAN QUEENS \$2.00; after June 1, \$1.00. Tested, \$2.00. A. W. Yates, 15 Chapman St. Hartford, Conn.

HIGHEST grade Italian queens -Tested, \$1.50; untested, 75 cents. Package bees, one pound, \$1.50; two pounds, \$2.50; three pounds, \$3.25. Have had no disease. State inspection certificate with each shipment. Safe delivery guaranteed. T. L. Davis, Buffalo, Leon Co., Texas.

GOLDEN THREE-BANDED and Carniolan queens. Tested, \$1.00; untested, 75c each. Bees in 1-pound package, \$1.50; 2 pounds, \$2.50; 3 pounds, \$3.25. Safe delivery guaranteed. C. B. Bankston, Box 65, Buffalo, Leon Co., Texas.

QUEENS for the balance of the season, quality equal to the best. Write and get prices. O. P. Hendrix, West Point, Miss.

LATHAM'S "She-suits-me" three-banded untested Italian queens, \$1.50 by return mail. If ordered four weeks in advance, six queens for \$5.00, twelve for \$10, 50 for \$40, 100 for \$75 \$40, 100 00 for \$75. Allen Latham, Norwichtown, Conn.

PACKAGE BEES AND QUEENS— Jasper Knight, Hayneville, Ala.

THRIFTY Caucasian queens from daughters of imported mothers. After April 15: One, \$1.50; twelve, \$14.00. Safe arrival. Tillery Bros., Greenville, Ala., R. 6, U. S. A.

GOLDEN UNTESTED QUEENS-Gentle and good honey gatherers as can be found, \$2.00 each. Tested, \$4.00 each. Best breeders, \$20.00. Over thirty years a golden ers, \$20.00. Italian breeder. J. B. Brockwell, Barnetts, Va.

FOR SALE

FIFTY colonies of Italian bees. No disease. Am moving.
Lynn J. Hopkins, Tampico, Ill.

FOR SALE-Sixty colonies bees; clean, new and painted. C. M. Piper, Garden City, Kans.

FOR SALE—150 colonies of bees. N. Staininger, Denison, Iowa.

FOR SALE—100 colonies of bees in ten-frame standard hives, metal covers; comb and extracting equipment. No disease. Chester E. Kiester, Orangeville, Ill.

OR SALE-Or trade for bees, one 20 and one 23 tract of land in the state of Washington; unimproved.

W. S. Earls, New Canton, Ill.

DOUBLE-BARREL introducing cage. In provements make the world better.

J. F. Diemer, Liberty, Mo.

COME TO LOUISIANA—See bees.

every month. "Sugar Bowl" and Belt" of America. Richest productive lands, bargains. Stock grows to maturity at no cost on nature's grasses. You buy rice commodity from first hands. your wants.

J. P. Hoyt, Estherwood, La.

25 GALLONS formaldehyde solution used in 25 GALLONS formaldehyde solution used in treating foulbrood, \$25.00. A rebate of \$5.00 will be given for the return of the steel drum. Beeswax wanted also. Send in your old combs and cappings; we will render them for 5e per pound of wax secured. Rendering F. B. combs, 10e per pound. Glass front shipping cases, any size section, per 100. \$33.00. them for dering F. B. combs, any size screen front shipping cases, any size 100, \$33.00.
F. J. Rettig & Sons, Wabash, Ind. 455-485 W. Canal St.

ATTENTION, BEEKEEPERS—For sale at once, forty colonies bees in Jumbo hives; sections, foundation, hives, Root two-frame extractor, new and used standard and Jumbo equipment. Will sell all or in part. Certificate of inspection with above. Everything must go. Some fancy comb honey.

Ernest W. Peterson, R. 2, Sandwich, Ill.

FOR SALE—We are constantly accumulating bee supplies, slightly shopworn; odd sized, surpluses, etc., which we desire to dispose of and on which we can quote you bargain prices. Write for complete list of our bargain material. We can save you money on items you may desire from it.

Dadant & Sons, Hamilton, Illinois.

HONEY AND BEESWAX

COMB HONEY-In case carriers. V for prices. W. L. Ritter, Genoa, Ill.

FOR SALE-20,000 pounds fine basswood honey, 9½c; 9c entire lot; f .o. b. Porthoney, 9½c; 9c entire lot; f .o. b. Pond. Sample 10c. Ralph E. Blackman, Portland, Mich.

FOR SALE—Comb honey. Prices on request. C. Holm, Genoa, Ill.

FOR SALE-White clover comb honey, crop. Charles Guhl, Napoleon, Ohio,

EXTRACTED HONEY WANTED kind. E. Wis. price and quantity and what kind Strudel, 1693 19th St., Milwaukee,

HONEY FOR honey in 60 R SALE — White and amber 60-lb., 10-lb. and 5-lb. tins. honey in 60-10-,
Write for prices.
Dadant & Sons, Hamilton, Illinois.

FANCY buckwheat comb, also amber. Fine quality, low price. Write. N. B. Querin, quality, low price.
R. 7, Bellevue, Ohio.

WANTED—Comb and extracted white clover honey. Name your best price, delivered. M. V. Facey Honey Co., Preston,

CLOVER—Slight basswood blend. One can. \$6.00; two, \$11.00; six, \$30.00. Special price on one- or two-ton lots. Delbert E. Lhommedieu, Colo, Iowa.

FLORIDA HONEY—Blend of orange and gallberry, in 60-pound cans, 12 cents per pound. Richard Knorr, San Matco, Fla.

CHOICE Illinois extracted honey in containers to suit.

Henry Stewart, Prophetstown, Ill.

FANCY tupelo honey in half barrels. D. Steengrafe, 116 Broad St., N. Y.

FOR SALE—No. 1 clover comb honey, \$4.50 per case; No. 2, \$3.50. Buckwheat 50 cents less, 24 sections to case, six- or eight-case carriers. Buckwheat extracted, well ripened, fine, 7 cents, two 60-pound cans to case. Clover in 5-pound pai:s, \$9.00 per dozen; buckwheat, \$8.00. For \$1.00 extra will add two chunks comb to pail.

H. G. Quirin, Bellevue, Ohio.

FINEST quality white clover honey in new 60-pound cans, \$10.50 a case. Sample 15 cents. Order from this ad. Martin Carsmoe, Ruthven, Iowa.

FOR SALE—White clover honey in 60-lb. cans. Sample 15 cents.
Alfred Stutt, Creston, Iowa, R. 5.

FOR SALE—Choice extracted white clover honey in 60-pound cans; last year's crop; 10c in small lots, 9½ c in large lots. Sample 15c. E. J. Baxter, Nauvoo, Illinois.

WHITE COMB HONEY—\$3.85 case.
Marsalek Apiaries, Cadams, Neb.

HONEY WANTED-Several thousand cases HONEY WANTED—Several thousand cases white clover comb honey, size 4½ x4¼ x 1½. Must be white and strictly graded, fancy and No. 1. No other grade wanted. Also extracted. Send sample, give quantity and price wanted. We pay cash. A. L. Haenseroth, 4161 Lincoln Ave., Chicago, Ill.

NEW CROP clover extracted honey in new cans and cases, in case or ton lots. Un-usually fine quality and the price is right. Price on request. Sample 20c. Harry C. Kirk Armstrong, Iowa.

FOR SALE—Extracted and Chunk Honey. New crop very fine; 1-lb. sample for 25c. Prices on request. F. W. Summerfield, Waterville, Ohio.

WHITE AND BUCKWHEAT honeys wanted.
Write us quantities each grade, how
packed and lowest price will take, stating
when can ship. Also quote comb honey,
stating how packed, section sizes, etc. Always ready to take in large and small lots
section and comb.

Arthur H. Hoffman, Inc.,
Richmond Hill, N. Y.

NEW crop shallow frame comb honey, also section honey; nice, white stock, securely packed. Available for shipment July 15. The Colorado Honey Producers' Association, Denver. Colo.

FANCY white clover extracted honey, any sizes. Prices and samples on request. Kalona Honey Company, Kalona, Iowa.

PARTIES wishing extra fine honey reasonable, any time, write Lee Horning, a Proable, any time, we ducer, Morrison, Ill.

HONEY (comb and extracted), pure maple syrup, maple sugar and sorghum molasses. Special price to quantity buyers. C. J. Morrison, South Bend, Ind, 1235 Lincoln Way West.

STURDEVANT, St. Paul, Nebraska. Finest quality clover honey.

WANTED—A car or less quantity of white honey in 60-lb cans. Mail sample and quote lowest cash price for same. J. S. Bulkley, Birmingham, Mich.

FOR SALE—White clover honey in 60-lb. cans. None finer. Satisfaction guaranteed.

J. F. Moore, Tiffin, Ohio.

HONEY FOR SALE—In 60-lb, tins. White clover at 12c lb.; white sage at 12c lb.; white orange at 14c lb.; extra L. A. sage at 11c lb.; Hoffman & Hauck, Inc., Ozone Park, New York.

SHALLOW frame white comb honey and white extracted honey.

The Colorado Honey Prod. Ass'n, Denver, Colo.

HONEY FOR SALE—Any kind, any quantity.

The John G. Paton Co.,
217 Broadway, New York.

FOR SALE-Northern white, extracted and

FOR SALE—Northern white, catalogues comb honey.

M. W. Cousineau, Moorhead, Minn.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans. State quantity wanted and we will quote prices. Samples on request.

Dadant & Sons, Hamilton, Illinois.

SAG of fi 60c. Post

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SUPPLIES

SAGGED COMBS are result of slackened wires caused by wires cutting soft woo of frames. Use metal eyelets. Per 1,000 60c. Handy tool for inserting eyelets, 25c Postage 3c per 1,000. Superior Honey Co., Ogden, Utah.

ROOT EXTRACTOR — Reversible, good as new, \$25. C. W. Fitzsimmons, R. No. 3, Mason City, Iowa.

FOR SALE—Straw skeps. Displayed with honey, they increase sales. G. Korn, Berrien Springs, Mich.

SHIPPING CAGES — Comb and combless. Sugar pine; machine made; in flat; no metal. Best and cheapest you can find. Sample 15 cents, prepaid. E. P. Stiles, Sample 15 cents, prepaid. E. P. O. Box 422, Houston, Texas.

BEST QUALITY bee supplies, attractive prices, prompt shipment. Illustrated catalog on request. We buy beeswax at all times and remit promptly.

The Colorado Honey Producers' Ass'n,

"BEEWARE" and Dadant's Wired Foundaof the Northwest. Catalog price
O. B. Fromberg, Montana. Beeswanted. Write for prices.
B. F. Smith, Jr., Fromberg, Mont. Catalog prices. ana. Beeswax wanted.

MISCELLANEOUS

TWENTY-ACRE farmland. Outfit for fifty colonies; fine location for commercial bee raising, one-fourth mile from main highway, store and school. Price \$1500. Fred Ephardt, Lillian, Ala., Baldwin County.

THE DADANT SYSTEM IN ITALIAN—
The "Dadant System of Beekeeping" is now published in Italian, 'Il Systema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

MAKE queen introduction sure. One Safin cage by mail, 25c; 5 for \$1.00.
Allen Latham, Norwichtown, Conn.

WESTERN HONEY BEE 2823 E. 4th St., Los Angeles, Calif., published by Western beekeepers, where commercial honey produc-tion is farther advanced than in any other section of the world. \$1.00 per year. Send for sample copy.

GLEANINGS IN BEE CULTURE, published at Medina, Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is George S. Demuth. Its field edi-tor is E. R. Root. Ask for sample copy.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list. American Bee Journal, Hamilton, Ill.

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YOU can read in either English or French the report of the Seventh International Congress of Beekeepers held at Quebec, Sep-tember 1-4, 1924. Not more than a dozen copies left. Orders filled in rotation. Post-paid, \$2.25. American Bee Journal.

BARGAIN in bee papers. Three best in U. S. "Bees and Honey" and "American Bee Journal," each one year, and "Gleanings," two years—all for only \$2.50 in U. S. Order from Bees and Honey. (Sample copy free.) George W. York, Seattle, Wash.

WANTED

WANTED—Shipments of old comb and cap-pings for rendering. We pay the highest cash and trade prices charging but 5c a pound for wax rendering. Fred W. Muth Co. 204 Walnut St., Cincinnati Ohio.

Another Case in Court

W. H. Force, of Champaign, Illinois, one of the deputy bee inspectors for Illinois, is having some difficulty, we understand, with reference to keeping his bees within the city limits of Champaign.

As is the case in many other instances, an effort has been made to pass an ordinance prohibiting the keeping of bees within the city limits.

Again we want to advise our readers that such an ordinance is absolutely unconstitutional and will not stand, as many previous cases prove. We urge any beekeepers having similar trouble to take the matter up with the city council involved and with their own state beekeepers' association so that efforts may be made to furnish evidence for fighting such

When there is a petition put in to have bees removed from within the city limits of any town, it is necessary for the complainant to prove that individual bees in question are a nuisance. In other words, the city council cannot declare all bees within the city limits a nuisance, but must so prove each individual case.

In the case in question, if it can be proved definitely that Mr. Force's bees are a nuisance to neighbors, then the city council can force him to move them, but "spite" cases usually never get very far when the city council once realizes the true

STATEMENT OF OWNERSHIP

Statement of the ownership, management, statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of American Bee Journal, published monthly at Hamilton, Illinois, for September, 1928:

STATE OF ILLINOIS, BA. County of Hancock.

Before me, a notary public in and for the state and county aforesaid, personally appeared M. G. Dadant, who, having been duly sworn according to law, deposes and says that he is the business manager of the says that he is the business manager of the American Bee Journal, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, rendered by the Act of August 24, 1912, embedied in Section 443, Postal Laws Regulations, printed on the reverse side of this

of this form, to-wit:
1. That the names and addresses of the publisher, editor, managing editor and busi-

ness manager are: Publishers, American Bee Journal, Ham-

Publishers, Holden, III.
Editor, C. P. Dadant, Hamilton, III.
Managing editor, Frank C. Pellett, Ham-

Business manager, M. G. Dadant, Hamilton, Ill. 2. That owners

C. P. Dadant, Hamilton, Ill. H. C. Dadant, Hamilton, Ill. V. M. Dadant, Hamilton, Ill.

V. M. Dadant, Hamilton, III. C. S. Dadant, Hamilton, III. L. C. Dadant, Hamilton, III. M. G. Dadant, Hamilton, III. Leon Saugier, Hamilton, III. Joseph Saugier, Hamilton,

That the known bondholders, mortgagees and other security holders owning or holding one per cent or more of the total amount bonds, mortgages or other securities are

(Signed) M. G. DADANT, Business Manager American Bee Journal. Sworn to and subscribed before me this fourth day of September, 1928.

BIRDIE ASH,

Notary Public.

My commission expires March 6, 1930.

SUGGESTED SELLING PRICES HONEY—1928-29

In figuring sales to retailers deduct 20 per cent from retail price below. For jobbers, deduct an additional 10 to 15 per cent. Prices suggested are for good white grade. For amber, deduct 1 cent per pound.

16-Ounce Jar	New England \$.40	Atlantic Coast \$.35	South- east \$.30	Central West \$.25	Plains	Louisiana- Texas \$.25	South- west \$.25	Inter- mountain \$.25	North- west \$.25	Cali- fornia \$.30	East Canada	West Canada
21/2-Pound Can	.75	.70	.60	.60	.60	.60	.50	.50	.60	.60	der part and	
5-Pound Pail	1.25	1.15	1.00	1.00	1.00	1.00	.90	.90	.90	1.00	1.00	.90
10-Pound Pail	2.25	2.25	1.80	1.90	1.80	1.75	1.75	1.75	1.75	1.75	2.00	1.75
60-Pound Can	.16	.14	.14	.14	.12 1/2	.12	.12	.12	.11	.12	.13	.13
10-60-Pound Can	.13	.12	.12	.12	.11	.10	.09	.10	.10	.10	.12	.12
Carlot, 2-60		.10	.09	.10	.09	.08	.08	.08	.09	.08 1/2		
Barrels			.09	.09		.08			-(
21/2-Pound Bulk Comb	.65	.65	.60			.70						
5-Pound Bulk Comb	1.40	1.40	1.10			1.25	1.10					
10-Pound Bulk Comb	2.75	2.75	2.25			2.25	2.10					
Comb, Single Section	.40	.35	.30	.30	.30			.25	.25			
Comb, Fancy, Case	7.00	6.50	5.50	5.50	5.00			5.50	5.50			
Comb, No. 1, Case	6.00	6.00	5.25	5.00	4.50			5.00	5.00	-		
Comb, Choice, Case	5.50	5.75	4.75	4.75	4.00			4.50	4.50			
Comb. Fancy, Carlot		~~~					4.50	5.00	5.00			
Comb, No. 1, Carlot							4.20	4.50	4.25			
Comb, Choice, Carlot							3.90	8.75	8.75			

Golden Queens and Banded Bees

Untested queens	\$1.0	0 eac	ch
Tested queens	\$1.6	0 eac	ch
Bees\$1	.50	per l	b.
Nucleus\$1.50	per	fran	46

Bees inspected; free from disease

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American Bee Journal Hamilton, Illinois

Manipulation

By W. M. Egan .

THIS is the management of bees, which is a part of what we usually term beekeeping. If the subject was exhausted the bee journals could quit. We learn from one another. My system may not be as good as yours, but I can improve it by reading about yours.

There is a whole lot in the way we manipulate our bees during a season. The conditions are not the same in each hive nor in two different apiaries, but there are some general objects to be accomplished in the handling of bees.

By November the bees are packed away for the season. We can do nothing more. If they have not been fixed up right the consequence will tell in the spring. I try to have them place sufficient honey where they can use it during the winter, in a onestory hive, and keep them breeding as late as possible so as to have young bees to live till spring. This, however, the bees have to regulate themselves, mostly.

We can take the surplus honey off early or late, which has some influence with them. If the fall plants yield honey, they will fix themselves up without help. If not, they can be fed sugar syrup; and if they can get pollen till late, they will breed late and not have all old bees to die before they can raise more.

I like the lower story left for the bees to winter in, on the summer stand, with all the surplus removed and a cloth cover placed tight over the frames and the cover put on. Then I pack them with leaves to the height of the hives. Over the hives I place gunny sacks filled with leaves, so they can be more easily removed when necessary. I cover them with good roofing rolls, also the same material on the sides. The front is left until heavy frost keeps them in the hive. Then the front is packed with leaves in sacks, with entrances extended to the outside after being contracted to a small opening.

When the bees come out on a warm day for a cleansing flight is a good time to judge of their condition and the strength of the colony without opening the hive. If there are any that seem so weak that they are likely to go under, it would be wise to examine them and see if they can be helped. I found one swarm last spring whose queen had just commenced to lay and had a small patch of brood on the lower part of the combs, but a cold spell had come and the old bees had mostly died off. I just caught them in the nick of time, and by giving them some hatching brood from a strong colony I saved the queen and built them up to a good swarm with some more help in that way.

I don't suppose I can help the bees much, only in cases of this kind, until the weather is settled, except to give them all the honey or syrup they will take. My feeder is just empty combs laid around on the hives and filled frequently with syrup or thinned honey. It is not bad to have it quite thin. By this method I don't have to bother with feeders.

They can most generally get pollen long before they can get any honey to speak of, so to feed them stimulates brood rearing and helps them out when they most need help. To put on a food chamber above the colony may be good practice and is so advised by some beekeepers, but I have never done so. I would much rather replace a few empty combs with full ones, as it would not give any more hive space for the bees to keep warm. I think I argued that out in a former article (page 538, October, 1927, number of American Bee Journal).

Spreading the brood is good practice if properly done. I have given empty combs, sometimes every other frame, and have had it succeed, but I think it is unwise, as sometimes a cold spell comes and the brood gets chilled. A few frames at a time is the best, in my judgment.

It strikes me at this moment that it would be a splendid thing to stamp the date on the frame or write it; then you could tell when to expect the bees to be hatching. Of course, we can look the frames over and locate hatching bees when we want them, but if we can see the date when the empty combs were given we know the bees will begin to hatch three weeks after, and if we want to build up a colony for "queen breeding" we can prepare for it more readily, but I shall leave that for a future discussion; it is a part of the manipulation features that belong to this subject.

Now as to the actual work among the bees that require the handling of the frames of each colony. look the bees over without any object or knowledge of what to look for or what we want to find out is of little use, but there are things we want to know. We want to know about the brood mostly, for that is the key to the whole situation of the colony. It tells whether the queen is doing good work without even seeing her. We want to know if they have plenty of honey and empty combs to go on with their work. We want to know if they need help, or if they can give help to others, We if they can give help to others.

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should be prepared to look them over expeditiously. A veil, a smoker (to use when you have to), a screwdriver or hive tool. A chisel is a pretty good tool if you have no others. In using the Hoffman frames it sometimes is a bother to get out the first frame. If the first one at either side of the hive is easily removed the rest will be no trouble. If I don't have plenty of space for this I trim some of the frames with a plane until they are no more trouble.

Early in the season there will not be so much brood as later. If they are progressing favorably, have a good lot of brood, some honey and empty combs enough to keep the queen going, that is about all you want, but if lacking in any of these particulars they should be supplied at once. If but little brood is found it is good practice to help them by giving a frame of hatching bees from some strong colony that can spare them. That will boost them up.

It is always my principal job to help the weak and to give the strong a job—that is, give them room. If they are full of brood, taking a frame away and giving them an empty one gives them something to do, and that is what we are after, to keep them all busy.

I want to make a better record in the future of the condition of each hive, as my memory of it does not last long, and if the record is where I can see it the next time, I can do the work better. I shall take my pencil along and when through with the examination I shall write on the hive, or on a slip of paper under the cover, what I have found to be the condition; about how many frames of brood they have. If I have seen the queen I shall state if she is clipped. Having this record, I can then tell the next time I look what to expect, or if I need help I know where to go for brood.

My best swarm will have the most prood and bees. As I examine them I am able to judge which is the best queen to breed from and make preparations for that purpose. If the queen is not clipped, I open some honey on the combs in a handy place and set the queen's feet on the honey. She will then hold up her wings in attempting to get off, when they can be clipped as desired. The hive should then be marked, so you will know when they are all done.

After queen-rearing, it is about the same process of building up the nuclei into strong colonies. Borrowing frames of hatching bees from strong colonies, we can make a strong colony out of one of them about as quick as we wish, or we can et them grow into a strong swarm in their own time by the work of their own queen and her working helpers.

During the honeyflow it is a different matter and everyone has his own method. I usually take out the side frames when filled as I come to them until I have about half enough to fill a hive body, and then I fill it up with empty frames, combs or foundation between each of the full ones and set them over a strong colony, keeping that system up until all are arranged that way. When the upper story is full, I give them another until I am ready to extract. The bees are then brushed off or the bee escape put on until the frames are free from bees, when they may be taken to the extractor.

Those with large apiaries have to do things in a sort of wholesale manner so as to save time, and the management is worked out by each one according to his circumstances. I am not suggesting anything to them. The little folks who don't handle so many bees can more readily take advantage of some of these thoughts.

Utah

Thomas J. Hawkins Passes On

Death has entered the ranks of the Eastern Massachusetts Society of Beekeepers, and Thomas J Hawkins, one of the original members since March, 1906, has gone hence. Mr. Hawkins enjoyed probably as large an acquaintance among beekeepers as any eastern man. He had been at different times both president and secretary of the organization and was ever and always loyal to its interests. He was an enthusiastic and successful beekeeper and ready and willing at all times to go any distance to assist and teach a beginner. He will be greatly missed by the organization. Brother Hawkins leaves a charming family, all gifted musicians, and he was greatly beloved by all.

Eradication Work in California

The monthly bulletin of the Department of Agriculture of the state of California gives the report of a county-wide cleanup in Colusa county under the supervision of T. A. Willis.

The report indicates serious conditions were present previous to the cleanup, owing to the fact that there were a number of parties who were continually infecting neighboring beckepers and preventing any material progress in this line.

In all, 4770 colonies were inspected and 1004 found diseased, all of which were completely burned. The county has an estimated number of 6500 colonies altogether.

This cleanup is in cooperation with the State Department of California and their new bee law.

New Facts About Nectar

By O. W. Park, Ph. D.

Nearly a thousand samples of nectar have been studied by the writer at the Apicultural Laboratory of the Iowa Agricultural Experiment Station during the past three years. Both chemical and physical methods of analysis have been used. The samples studied represent practically all of the major and many of the minor honey plants of Iowa. A large amount of data has been secured on both the quantity and the quality of the nectar secreted.

The purposes of these studies are: (1) To discover factors which influence either the quantity or quality of the nectar produced by a given species or variety; (2) to find means for measuring the value of a given species or variety as a honey producer, and (3) to advance our knowledge of how the honeybee changes nectar into honey.

In this preliminary report only a few of the outstanding results can be mentioned:

- 1. In general, nectars which are secreted abundantly have a lower sugar concentration than do those which are secreted less abundantly.
- 2. The great majority of samples studied contained between 40 and 55 per cent sugar. Comparatively few ran below 30 or above 60 per cent.
- 3. Sugar concentration varies from hour to hour in nectar from a given source. Nectar which is secreted in large quantities varies less from hour to hour than does that secreted in smaller quantities.
- 4. One of the most important factors in causing variation in concentration is the relative humidity of the atmosphere. It was found that the curve which represents the variations in the sugar concentration during the course of a day is practically the reverse of the relative humidity curve for the same period. Another factor which appears to cause variation in nectar concentration is sunshine (or the lack of it), but its effect seems to be comparatively slight.
- 5. In some species of plants the same flower continues to secrete nector throughout a period of several days.

Iowa Research Bulletin No.108

We are advised that the first edition of Dr. Park's recent bulletin on "Time Factors in Relation to the Acquisition of Food by the Honeybee" was exhausted some weeks ago; but that requests for it are being listed and copies will be mailed as soon as a second edition can be printed. Requests may be addressed to Dr. O. W. Park, Iowa Agricultural Experiment Station, Ames, Iowa.

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Abkhasian Bee

A MONG all Caucasion bees, the Abkhasian bee at the present time attracts the highest attention. This is no surprise, since, according to the recent microscopical biometric measurements of the Russian investigators, the Abkhasian bee has the longest proboscis.... The careful observations of some of the agricultural experiment stations of U.S. S. R. have proven that this bee positively works on the red clover.

There is no wonder that the demand for this bee grows day by day, as we can judge from the Russian bee journals.

What is the Abkhasian bee? The simplest and natural answer, "the "Abkhasian bee is a bee living in Abkhasia," gives no clue. It would seem we must find the best data about the matter in question in the Russian bee literature. But this is not the case. The Russian bee literature in any case, when arises the question about the Caucasian bee, always cites the old theory and de-

cides all questions according to it. The main theses of this theory are as follows:

The typical bee for Caucasus is the mountain gray Caucasian bee from high mountain localities of Caucasus. In the valleys of Transcaucasus lives the second sort, the yellow Caucasian bee, Persian bee. These two bees have given the third Caucasian bee, the crossbreeds between the gray mountain bee and the

yellow Persian bee. Republic Abkhasia, which lies between the Black Sea shore and the main mountain ridge of Caucasus. has, according to this theory, all three sorts of Caucasian bees: below, along the seashore, the yellow Persian bee; above, in the mountain region, the gray Caucasian bee, and between them the crossbreeds. But it is not the case positively. The above mentioned theory is obsolete and very disputable. It cannot comprise and explain the Caucasus reality. One quotes this theory merely because there is no better conception. Its main defect is that it deals exclusively with the bee's coloring and gives almost no attention to other more essential characters. The bee's color, as it is known at present, is not of great moment in the description of the races.

First, there is no proof that the aboriginal, from time immemorial, native Caucasus bee was a gray Caucasian bee. Whence appeared in Caucasus this gray bee? From the South? This is impossible. South, Persia and Asia Minor, is the region of the yellow bee. From the North? It is likewise impossible. There are the immense steppes and the northern bee is entirely different. Secondly, the yellow bee of the lower

parts of Caucasus is not the same in every place. Thirdly, the particular characters of the bees from the various localities of Caucasus cannot be put in the limits of this theory.

The matter in question must be presented in some other way. We have the one undoubted fact, the presence in Caucasus of the real southern yellow bee. Only this undoubted fact can be a sure, solid point of the start for every conception concerning the Caucasian bee. In fact, as soon as we accept this point of view we get all in the right

place.

Caucasus is undoubtedly the home of the southern yellow bee, which is a real Caucasus bee. It cannot be otherwise indeed. This yellow bee varies in color according to the elevation of the locality. It seems it is the rule that the warmer the locality the brighter the bee's color. Therefore the bee of the Caucasus valleys has more yellow than the bee of the highland, which becomes the grayer the higher the altitude. But that it is the same bee is proven by the identity of its character, its customs, etc. On all this evidence we must admit that only two sorts of bee exist in Caucasus, the first a yellow, bright yellow bee from Asia Minor, the second a dark yellow bee, the Abkhasian bee. These bees appear yellower in the lower localities, less yellow in the upper parts of Caucasus, and gray in the high mountains, according to the decrease in warmth. The bright yellow bee is less valuable from the economical standpoint of view. It is very effeminate, less productive, swarms readily; 100 to 150 queen-cells in the colony is a common sight. It is true of both the yellow and the gray. If we give eggs to a queenless colony with egglaying worker bees, the colony will not be long in building up queencells. The color of this bee is lemon. It is an inhabitant of the eastern and northern parts of Caucasus. The dark yellow bee inhabits Abkhasia and it is the second sort of the real Caucasian bee. The color of this bee is orange. This bee differs essentially from the bright yellow bee, being strong, energetic, and an excellent, self-devoted worker. It has the greatest economical value. It swarms very little and builds only very few queen-cells. If the queenless colony already has egg-laying worker bees, it will be useless to give it eggs, as the colony never builds up queen-cells, but very peacefully accepts a new queen.

It is very easy to imagine the colonization of Caucasus by the bright yellow bee by its progressive moving forward from Asia Minor. It is quite another thing in relation to the dark yellow Abkhasian bee. There can be

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only two hypotheses: either this bee is an aboriginal native Caucasus bee or it has appeared here from with-The data does not permit accepting the first hypothesis and one is forced to suppose importation. The striking resemblance of Abkhasian bees to the Italian bee brings the conclusion of the close relationship of these two bees on the supposition of the Abkhasia bee having been imported by the ancient colonists of Abkhasia, who were Greeks. The location conditions didn't remain without influence and resulted in those characteristics which so distinguish the Abkhasian bee from the other.

Gregarius Mosolevsky, Sukhum, Abkhasia Caucasus,

U. S. S. R. (We give the above without comments on its correctness. We are not acquainted with "Abkhasia," as it is not found on any of our maps. We judge that it is a district of Georgia, which is itself composed of several provinces, one of which is Tiflis. Russia is so immensely large that a dozen provinces are comprised within its Caucasus. But if the Abkhasian bee has the qualities reported above we should be informed of it.-Editor.)

"A Study of the Cause of Honey Fermentation"

A new bulletin by F. W. Fabian and R. I. Quinet, of the Agricultural Experiment Station, Michigan State College, East Lansing, Michigan. Mr. Fabian presented a popular discussion of his subject as the first article in the September number.

The bulletin goes fully into the work of these two investigators, source of yeast in honey, enzymes found in honey, amount of moisture absorbed by extracted honey, relation between moisture content and fermentation, with a complete study of the yeasts. It is a bulletin of forty-one pages, with illustrations. Those interested inquire at the above

Improved Bees Need Greater Space Between Frames

We find that the old spacing of 1% inches between frames is enough for the former black bees. frames are wider they will build burr-combs. However, the improved strains, such as the Carniolans, will do much better, swarm less, if the frames are spaced as wide as 1% inches from center to center. The space left gives the bees more room

T. Gorsuch, Maryland. (In a brood body, 11/2 inches, with comb foundation, will not allow burrcombs; 1% is too much and unnecessary .- Editor.)



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Herman McConnell

(The Bee and Honey Man)

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Cause of Granulation in Honey

By O. B. Griffin

THE season of 1925 gave me a new experience in the production of honey, comb in our case. The season was very cool, with only a few warm days. Clover was nearly a failure, so that, with the exception of a few scattering fields within reach of our yard, there was but a light surplus from this source. When we took off some of the honey the first of August, we were disappointed in the quality and were surprised to find it showing granulation. Later, in September, when we took off the remaining supers, we had another surprise. Whole supers were granulated. The crop was less than fifteen hundred pounds, and, when stored in a moderately warm room, it granulated so solidly that we did not attempt to fill our regular orders.

After the rush of the harvest season's work on the farm, we cut out the sections and melted them, bottling the honey to be sold in this way. We always do this with broken combs and sections that are not good enough to grade as number two. We heat only enough to separate the wax from the honey, and the heating keeps it liquid until consumed, with the exception of dandelion honey, which will granulate again, unless heated quite hot. Even dandelion honey will remain liquid for some weeks if kept in a moderately warm room.

Within a month after some of this honey had been melted down and bottled, we found it was again granu-This seemed to spoil our preconceived ideas of granulation, for we had kept all this crop under better conditions than usual. We had several times overlooked a super or two of honey and left it all winter in a room without fire, where the temperature at times was below zero, and in spring found the honey showing little or practically no granula-tion. What, then, was the reason for the honey granulating so much more this season of 1925 than it ever had in our experience of thirty years?

Was the condition local? No, for I found, while on a trip to New York City, that the honey in the windows of stores, where I saw any at all, granulated badly. The winter losses of colonies all over the northeastern part of the United States and Canada were very heavy in 1925-26. We lost one hundred colonies out of one hundred and fifty put in the cellar, and many of those that lived were weak and showed the effects of dysentery. Others lost their entire apiary. We fared better than many, I think, due to the fact that better care was given the bees, and some colonies had considerable honey in the brood frames from the season before.

In seeking for a reason for granulation during this season, I became convinced that the prime cause lay in the atmospheric conditions prevailing at the time of nectar secretion in the plant, and not in improper care after removal from the hive. No doubt the care of honey has much to do with it. Stored in a cold place, honey from some sources will granulate quickly. If stored in a room that is first cold, then hot, granula-tion is hastened. The same honey if stored in a very warm room, where the temperature is nearly even, will keep free of granulation much longer. Honey from dandelion always granulates quickly, because, in this latitude, it secretes nectar when nights are always cool. If the days are too cool, it does not secrete nectar at all.

Goldenrod and fireweed are two honey plants which bloom here, in Maine, the latter part of August and continue into September. Fireweed is a dependable source, where there is enough bloom, and blooms two weeks or more earlier than goldenrod. The quality is fine, and if gathered in August does not require much care to keep from granulating. However, nectar secured from this source in late summer or early fall when the nights are cool is much thinner and granulates quickly.

Goldenrod gives but little honey as far north as this (47 degrees latitude). When late summer is warmer than usual, we sometimes get a fair flow, and often the quality is fine, while the last of the flow is inferior to that gathered earlier.

Wild mustard in the grain fields furnishes considerable honey, and the quality is fairly good, if gathered in warm weather. In late grain it blooms later, and in potato fields until it is killed by frost. Nectar secured from late sources granulates quickly.

Clover honey is nearly all from alsike. This will keep under adverse conditions for a long time in the comb, without showing any granulation. There are years when it will not keep as well, when the summers are cooler than usual.

It is evident to me, and may be to many others, that low temperatures and weather conditions prevailing at the time of nectar secretion are the chief cause of granulation. Days may be warm enough for the plant to function to a certain extent, but if the temperature drops low enough over night we can be sure that the nectar will granulate after being stored in the combs. If gathered and ripened by a strong colony, it will be in better condition and keep longer.

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knowledge? We cannot control the weather, but if we can be fairly certain of what honey will do, gathered in a certain time of the season, we can prevent loss to quite an extent. Had I extracted the honey from the brood combs immediately at the close of the harvest in 1925, disposing of it to the best possible advantage, and fed the bees a suitable amount of sugar to carry them safely through the winter, it would have saved the loss of one hundred colonies of bees and the most of the crop of honey of 1926. Maine.

A Good Way to Keep Combs Free from Moths

To keep empty brood or extracting combs free from moth in hot weather, spray or paint the inside of the hives and bottom boards with Betholine, Amoco, or any high test gasoline, and shut up tightly.

In the honey house, paint the inside of the hive bodies with the gasoline, replace the combs, cover each body with a newspaper and place a super with the wood inside painted likewise above, and lastly paint the cover and put it over all.

Of course, this should always be done away from all fire or a running automobile, and to smoke while doing it would be suicide. Close the hives just as soon as possible after the combs are put in.

T. Gorsuch, Maryland.

Beeswax Scarce in Italy

The Federazione Apistica Italiana, Italy, states that it would probably be very difficult to find any dealers in Italy who would be in a position to furnish any important quantity of beeswax. The Federation advises that, with the extension of the apiary industry in Italy, the available supply of beeswax becomes more and more scarce and in large measure is required for the needs of the culture, so that there is very little available for industrial use.

The Federation adds that they do not know of any firm in a position to furnish beeswax and that, in view of the rather high cost of beeswax in Italy, it doubts whether it would be found possible to conduct an export trade.

Consul General H. M. Byington, Naples, Italy.

Beekeeping in Utah Shows Steady Growth

According to Dan Hillman, State Apiary Inspector, more than a million and a half dollars is invested in bees in the state of Utah. In 1927, 4,539,570 pounds of honey, valued at \$453,957.00, was produced. He estimates that there are 64,851 colonies of bees in the state.

G. P.

QUEENS of HIGHEST QUALITY

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MOST CAREFUL BREEDING

Prices for remainder of this season: 1 to 9 inclusive, \$1.25 each: 10 to 24 inclusive, \$1.20 each; 25 to 49 inclusive, \$1.15 each; 50 to 99 inclusive, \$1.10 each; 100 or more, \$1.00 each. Breeding queens, our very best, service guaranteed for 1928 and 1929, \$10.00 each.

V'rite for our free book "About Bees."

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American Bee Journal

Hamilton, Illinois

European Beekeeping

By Louis Alfonsus, Milwaukee, Wisconsin

I N 1845 the first bee journal was published, by the seminary teacher, Andreas Schmidt, in Eichstaedt, Bavaria. For five years it was the center for an exchange of thoughts for the beekeepers. Very soon, how-ever, they found there were matters which were debatable, and a personal discussion was absolutely necessary. These circumstances caused the first beekeepers' convention in 1850, and since that time beekeepers hold their annual convention every year in a different city, sometimes in Germany, Austria, or Hungary, but in the years of the wars, 1866, 1867, 1871, 1914 to 1922, and 1925, the meetings took place at Vienna. Phillip Baldensperger was present there. At the last meeting in Ulm, Wuerttemberg, some very remarkable lectures were given. It was very satisfactory to all who were there. The lectures were given by the most eminent scholars of European apiculture, and shall be mentioned here. Dr. Lander spoke on "The Formation of Honey from the Bloom to the Cell"; Provatdozent Dr. Koch, "The Foundation for the Chemical and Biological Test of Honey"; Professor Lawye (Prague, Cechoslovakia), "The Albumen of the Honey and Realization for Testing Honey"; Dr. E. Elser (Bern, Switzerland), "The Newer Method of Honey Analysis"; Dr. Armbrus-ter, "The Original Definition of Honey"; Dr. Hiemer, "The Heat Proportions in the Wintering of Colonies." Congressman Kickhoeffel reported about the economical difficulties of German beekeeping.

A counting of the colonies of bees showed a terrible retrogression since the start of the war. The high development of agriculture decreases the amount of nectar-secreting plants. The mighty competition of imported honey, which is very low priced, is a great danger. It hardly pays any more to keep bees with the little harvests of honey. It must not be forgotten that many beekeepers had to join the army during the war, and their colonies became a spoil for the waxmoth, for bees need care.

The convention discussed the necessity to again reach the former position in bee culture. The next meeting will be in 1927, in Leitmeritz, Cechoslovakia; 1928, in Gratz, Austria; 1929, in Koller, Germany.

The beekeepers in Switzerland, who did not take part in the war, exhibit a very pleasing result. In thirty years the number of beekeepers multiplied twice, the number of colonies thrice. This is caused by representative work of the Swiss Beekeepers' Association. No country

in the world has such an excellent organization as Switzerland.

The competition of imported honey, mostly from South America, was halted somewhat by honey control. When buying honey from places where honey is sold, you are instructed to buy only honey which is produced at home. In this way the honey which is produced in the country always finds a market at good prices.

The eradication of diseases is accomplished systematically.

The "Swiss Bee Journal" is one of the best of its kind in Europe. Not very long ago, Dr. Leuenberger, Senior of the Swiss Beemasters, became an honorary member of the University of Zurich. Dr. Leuenberger acquired particular merit in combating bee diseases. Dr. Karl Bruennich and Dr. Morgenthuler are well known Swiss beekeepers. Dr. Karl Bruennich is well known to readers of the American Bee Journal through some of his excellent compositions. Dr. Leuenberger reports in number ten of the Swiss Bee Journal about his inquiries with empty eggs. Such eggs laid into cells by a queen started to develop, but died before the larvæ came forth. Older inquirers of ovaries from queens laying empty eggs prove degeneration of those queens.

The best bee paper in Austria is the "Bienen Vater," Sepp Schmidt, an assidious young man, is editor of this magazine. He talks several languages and makes effort to get important information from foreign countries for his readers.

In Austria an American plant helped to increase the honeyflow. This is the goldenrod. Years ago, they imported from the U.S. A. the Solidago cana and Solidago seratina, for planting in public gardens and city parks. From there the seeds flew over the country, and today the Murriver Valley and the damp forests around the beautiful Danube are covered with millions of goldenrod plants, and furnish rich pasture for bees. In some places the goldenrod honeyflow is very plentiful and many apiaries are moved there. Increase from five to seven pounds a day is very often the case. Efforts are now being made to plant the root stocks of the goldenrod on places where it does not grow. It is a very fine gift from the New World and very much appreciated. Even nectar-secreting plants from China were secured; the Tree of the Gods is spread over the country. In many places this is the chief source of nectar in June. The honey from this tree is of a dirty green, but of mos
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tai thi ke very fine flavor and is preferred by most of the consumers.

The year of 1926 was a failure for beekeepers in most parts of Europe. To one who is acquainted with the circumstances that means a loss of many colonies of bees. The Austrian government gave twenty-three carloads of sugar, free from duty. This was a great help at that time, as many of the poor people were not able to buy sugar and their colonies were abandoned to starve.

Jugoslavia is a country which was founded after the war and is composed of Serbia and parts of former Hungary. The last year's activity in bee culture is very pleasing. The government employed a number of teachers moving from town to town to teach progressive beekeeping.

Carniola, the home of the Carniolan bee, is perfectly free of foul-brood. The Carniolan Beekeepers' Association is very active. They publish the paper "Slovensky Lebelar."

The yearly average is twenty-five pounds of honey per colony. Most of the beekeepers keep their bees in a simple wooden box without frames. Their main profit is in selling swarms. However, the movable-frame hive is gaining in popularity. Mr. C. P. Dadant will certainly be pleased to hear this. It is already used extensively in Jugoslavia.

In Croatia the straw hive is still in use. It is cheap, and very good

for wintering.

Germany now has fourteen schools teaching bee culture, some of which are supported by the government, while others were founded by beekeepers' organizations, with the help of the government. More than one thousand beekeepers took courses in bee culture in these schools during 1926. The state Institution at Erhengen, Bavaria, offers special work along this line. It is directed by Professor Dr. Zander. Dr. Thiener and Dr. Becker are two well known scientists at this institution. The students at this university help to solve problems which come up about beekeeping.

There is also a school for beekeeping in Berlin-Dahlem, which is under the management of Dr. Armbruster. In connection with this is also a laboratory for the study of bee diseases, with Dr. Borchert as leader. There are schools for practical beekeeping in East Prussia, Oldenburg, Hanover, and Holstein. Beekeeping is taught in nearly all agricultural colleges and high schools.

The bee journals and papers contain scientific as well as practical things about beekeeping.

The weak point in German beekeeping is the many different sizes and shapes of the hives, although the hive which is managed from the top is gaining in favor. The desire to



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JOHN M. DAVIS, Spring Hill, Tenn.

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find something new is doing great harm to the industry. In just a few years three hundred new shapes of hives have been brought into use. A beginner in beekeeping can hardly decide which hive to use. A supply factory had orders for four hundred different sizes of brood foundation in 1926. Poor Germany! Fortunate America! To stop this mischief, the beekeepers' organizations are going to give out standard sizes.

It is easy to imagine how much higher a hive is in price if a dealer has to keep in stock about twenty different shapes.

Rainfall in the summer of 1926 was more than plentiful, so only the beekeepers moving into the heather had hives and supers well filled. The honeyflow from the heather was better than it has been in many years

U. S. Bee Culture Laboratory Established in South

A new bee culture field station. known as the Southern States Bee Culture Field Laboratory, has been established by the United States Department of Agriculture at Baton Rouge, La. Special funds for this purpose were appropriated by the last Congress.

The Louisiana State University is providing laboratory facilities, heat, light, and janitor services, and is also assisting financially in the procurement of scientific apparatus.

W. J. Nolan, of the department's Bee Culture Laboratory, Somerset. Maryland, has been in Baton Rouge since early in July making necessary arrangements for conducting the experimental work. Dr. W. W. Whitcomb, Jr., recently appointed a member of the department's bee culture staff, is also at Baton Rouge, where he will be stationed permanently.

Plans for the future work of the laboratory are now being made, and one of the first matters to be considered is the advisability of having United States standards for package bees and queens. Scientific breeding probably will constitute one of the major problems to be taken up by the laboratory. Studies pertaining to honey production in the southern states will likewise be given careful attention

Portland Exhibit

The annual exhibit of bees and honey held in conjunction with the International Livestock Exposition at Portland, Oregon, will take place this year from November 3 to 10, inclu-Those desiring to exhibit may get full information relating to premiums, etc., by writing to S. D. Williams, 5125 Eighty-second St. S. E. Portland, Oregon.

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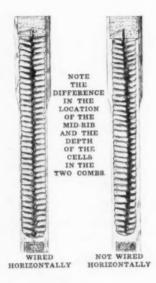
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There should be 19 worker cells on the average to four inches of comb, measured vertically. The rows of cells should be straight horizontally and they should extend from top bar close down to the bottom bar. (The first year they may extend to the bottom bar, but during the second year the bees will make a passage-way just above the bottom bar, unless the combs are never used in the brood chamber.)

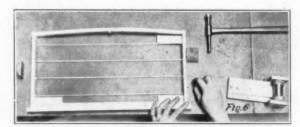
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